

**Climbers' Perceptions Toward Sustainable Bouldering at the Niagara Glen Nature Reserve**

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### **Dedication**

I would like to dedicate this work to my wife. Elles without your constant support and love this thesis and all of my other accomplishments would not have been possible. Thank you for keeping me in the present and keeping my mind alive!

### **Abstract**

Currently, there are a variety of concerns about the future of bouldering, a form of rock climbing, at the Niagara Glen Nature Reserve near Niagara Falls, Ontario due to environmental impacts at the site. The purpose of this study was to describe the perceptions of bouldering participants toward sustainable bouldering practices at the Niagara Glen. The methodological framework for this study was based on action research, which attempts to solve specific problems through having people in a community study, discuss, and act on those problems. Five separate focus group interviews elicited data from nineteen men and seven women, while there were twenty one men and ten women observed through participant observations at the Niagara Glen. Analysis was conducted through coding processes where data were compared repeatedly and then organized into themes. From the open coding process, two main themes were identified and interpreted as 1) Barriers to Sustainable Bouldering at the Niagara Glen Nature Reserve, and 2) Environmental and Social Role and Responsibility of Bouldering Participants at the Niagara Glen. The implications of the findings include a variety of recommendations for the bouldering community and the Niagara Parks Commission to consider for future collaborative planning. Some of these recommendations include more open communication between all stakeholders at the Glen, additional leadership from local climbing access coalitions and the Niagara Parks Commission, and greater implementation of minimum impact practices from the bouldering community. Additionally, these implications are discussed through a three-part framework based on a conceptual intersection of sense of place, community empowerment, and sustainable recreational use as a way to potentially unify the bouldering community's voice and vision toward sustainable practice.

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Additionally, my sincerest thanks go to my committee members Dr Tim O'Connell and Dr Erin Sharpe for their direction and constant support. This study is better for the time and effort that both of these individuals put into providing me with continuous comments and guidance.

This study stemmed from real and current issues affecting bouldering practices at the Niagara Glen. It is important to acknowledge the challenge associated with asking bouldering participants to critically analyze their participation at this location, as the threat of closure is always looming and the honest comments of any participant could have the potential to reflect negatively on the community. In light of these threats, I was pleased to sit and listen to the honest reflection of these individuals and I thank them for their narratives and time. Their responses reflect the urgency and love associated with this pursuit, and I am fortunate to be a part of this community.

I would also like to thank Michael and Mary Ruth Crabb for their encouragement and constant guidance over the years. Thank you both for your on-going support. Finally I would like to thank my parents for their support and love over the last thirty years. It may not have been easy, but it is always appreciated.

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### **My Role: Initial Thoughts**

I have been a member of the bouldering community in Ontario for close to ten years, and this study involved participants that I consider to be acquaintances and friends and boulder with frequently. Because of my close relationship to this group, I have been labelled as a bouldering advocate. This position shaped all aspects of this study from its purpose to the ways participants reacted toward me. In fact, many of the people who participated in this study felt that the only point of the study was to be sympathetic toward concerns about protecting bouldering access.

In some sense this reaction on the part of participants was completely accurate. I began studying issues affecting the Niagara Glen predominately because of the threat to bouldering access. My initial interest in studying bouldering practices at the Glen was to identify boulderers as environmentally conscious, and to defend our presence at this location. I initially was interested in gathering data that would help defend our actions at the Glen and identify the loss of environmental advocacy if bouldering were to be banned. Much of my interest in this study was politically motivated and in the beginning I believed that eliminating bouldering at the Glen was an injustice. I also came to believe (as did my peers) that the Niagara Parks Commission was targeting bouldering participants and directing blame for damage caused at the Glen toward the bouldering community. However, the more I studied environmental sustainability issues and began to understand impacts associated with bouldering and rock climbing practices, the more critically I began to look at our impact as boulderers on the flora and fauna found at the Glen. While I certainly want to protect bouldering access at the Glen, my perspective on our role at this location has changed and I believe a more critical analysis of our behaviours at this location is warranted.

I have been actively involved in access issues affecting the Niagara Glen since their inception. Initially this involvement was predominately based on my role as an advocate for the continuation of bouldering at this location and this contribution directed the topic of my undergraduate thesis. During this thesis project, we began to construct a narrative that evaluated



the perspectives of two long time boulderers toward the Niagara Glen, and in this analysis we attempted to understand what the elimination of bouldering at the Glen would mean to these participants. During this study we found that the participants' relationship to this bouldering setting was best described as a deep and personal relationship with the natural environment at the Glen. There was also a great deal of animosity revealed toward the current ecological state of the Glen and the impact this degradation was having on future bouldering access at the Glen. The results of my undergraduate thesis (specifically those outlining issues affecting environmental and social sustainability at the Glen) led me to believe that the examination of a much larger group of participants was required in order to reveal the views of participants toward access issues and both environmental and socially sustainable bouldering practice. By considering the perceptions of the Niagara Glen bouldering community at large, my desire was that the views of participants toward environmentally sustainable bouldering could be explored. By exploring the view of boulderers toward sustainable bouldering, I believed initially that the community would possibly come to understand their role and impact at the Glen more clearly. By discerning their impact I believed that bouldering participants might gain insight on current actions and that this comprehension would lead to more reflexive conversations and actions. I believed that through reflexivity, participants would be able to promote an empowered community of boulderers, allowing them to take further action as a group toward environmentally sustainable practices and a sustained role at the Glen. As a member of the bouldering community, I wanted to know if we would be willing to modify our behavior in order to maintain bouldering access. Environmentally (I realize) perhaps the Glen would be better off if it were closed to all recreational use, however, for now it is open to all groups for recreational and other pursuits. Therefore, the initial aim of this study was to allow participants to acknowledge their role at the Glen, and provide a venue for discussion. Through focus group discussions, I believed in the beginning that participants would critically evaluate their actions at the Glen (as I had) and that through action based research methods, solutions to unsustainable actions would follow.

## CHAPTER 1- INTRODUCTION

### Introduction

Rock climbers and their worldviews are important to explore because of access restrictions and policy redevelopment that are currently taking place at many different rock climbing locations across North America (Vaughan, Middleton & Brown, 2007; Southeastern Climbers Coalition, 2008). Similar policy redevelopment is taking place at the Niagara Glen Nature Reserve related to the activity of bouldering (a type of rock climbing that utilizes large boulders for the purpose of climbing). The Niagara Glen Nature Reserve is located in Niagara Falls, Ontario, Canada. This park has been considered a nature reserve for over a decade and has been identified as a “globally significant bird area since 1996” (Ritchie, 2002 p. 5). During this time, boulderers and other outdoor recreation participants have had the ability to participate in their chosen activities free from restrictions. There are issues presently affecting the future of bouldering access along with other forms of outdoor recreation at the Niagara Glen resulting from damage caused by a combination of all user groups to sensitive and endangered flora and fauna in the park (Ritchie, 2008). This non-restricted access will likely change as the Niagara Parks Commission is exploring ways to manage recreation and promote social sustainability, while encouraging increased conservation initiatives that directly manage recreational impacts affecting environmental sustainability (Vaughan, et al.).

As a result of proposed conservation initiatives, the Niagara Parks Commission has implemented a land management draft plan that recommends eliminating bouldering at the Niagara Glen, thus affecting the sustainability of future recreational experiences for bouldering participants (Vaughan, et al., 2007). However, the park has not yet instituted this policy and has been working to better communicate with all stakeholders about different user group concerns and needs (Ritchie, 2008). To understand if bouldering is to remain as an accepted outdoor recreational activity at the Niagara Glen, the social world of boulderers will need to be more thoroughly explored and understood. If the views of boulderers and their perceptions toward

bouldering practices at the Glen (and how these practices affect both environmental and social sustainability) are not explored, then this group of outdoor recreation participants may not have an opportunity to defend their role at the Glen and provide a rationale for why their presence at the Glen is important. Additionally, the NPC may benefit from listening to the responses of bouldering participants, as this may be a group that is willing to work toward implementing changes in their practice that could benefit the Niagara Glen, but their voices need to be heard in order for this to happen. While research has been conducted on rock climbing sites and other climbing related environmental issues (see Attarian, 1991, 1995, 2003; Kuntz & Larson, 2006; McMillan, Nekola & Larson, 2003), there has been little research that focuses on the vision of boulderers toward creating environmental policies that empower participants and promote environmentally sustainable use. This research is necessary to understand the steps bouldering participants are willing to take in order to become more environmentally sustainable recreationists and if they're continued presence at the Glen is warranted.

In the context of bouldering participation at the Niagara Glen, sustainability is conceptualized in this study through the lenses of both environmental sustainability and social sustainability. Environmental sustainability acknowledges the need to reduce exploitation of valuable resources and the frivolous use of the environment (Littig & Griebler, 1995). In this context, it is important to evaluate the way bouldering participants think about the natural environment at the Glen and how their actions impact the vitality of fauna and flora for generations to come. Furthermore, sustainability is also conceptualized in this study from a social perspective which seeks to equitably legitimize the social and cultural needs of groups of participants and the way these needs relate to the continuation of recreation activities including bouldering at the Glen (Littig & Griebler, 1995). Sustainability in a social context explores whether or not current recreation activities will be practiced at the Glen in future. With the potential implementation of the proposed land management plan (Vaughan, et al., 2007), the sustainability of recreation pursuits at the Niagara Glen is unknown.

With the proposed eradication of bouldering, it has been suggested that additional research into the lived experiences of boulderers will be necessary to affect policy change that is fair to all stakeholder needs at the Niagara Glen (Thompson, Hutson, & Davidson, 2008). Bouldering at the Niagara Glen has been identified as a healthy outdoor recreational activity that “brings together an awareness of outdoor aesthetics, nature based experiences, and social interactions” (Thompson, et al., 2008, p. 7). In order to enhance and maintain further recreation experiences that promote both environmental and socially sustainable interactions at the Glen, cooperation between the Niagara Parks Commission and boulderers needs to occur through increased understanding and identification of mutual needs. It has been suggested that this progress can be made through combined recreation and conservation cooperation that informs sustainable environmental policy (Ritchie, 2008).

In order to facilitate this type of understanding between the Niagara Parks Commission and boulderers, part of the aim of this research study was to view rock climbers as a community which has the potential to come together to identify a unified vision, or barriers to a unified vision of environmentally sustainable practice and community. To accomplish this, participants will need to become active in evaluating the actions of their community and actively work toward creating solutions eliminating barriers to environmentally sustainable practices. Informing this process was the methodological framework of action research.

Action research is used to focus on specific problems and helps people in a specific setting to solve problems by studying themselves (Patton, 2002). By evaluating their interactions at the Niagara Glen through the methodological lens of action research, participants were able to focus on and discuss barriers leading to (or away from) environmentally sustainable bouldering practices. They were then able to identify potential solutions to problems together, leading to a prospective unified vision that could help sustain bouldering practices at this location. By evaluating their own actions and working together to remove barriers to sustainable practices,

participants will be able to effectively control their environmental impact and recreational future at the Niagara Glen.

### **Purpose of Study**

The purpose of this study is to describe perceptions of boulderers toward environmental and socially sustainable participation at the Niagara Glen, in order to help inform future environmental policies as well as to understand the rock climbing community's vision for future bouldering practices at the Niagara Glen. Currently, the perceptions of bouldering participants toward environmentally sustainable bouldering is unknown, and this insight is required since the future of bouldering at the Glen may rely on changes to some bouldering practices that do not support environmental sustainability as identified by the Niagara Parks Commission. It was also important to reveal the bouldering community's vision toward a sustainable future at the Glen, as this may help determine what steps participants are willing to take to become a more environmentally conscious group of outdoor recreation participants.

### **Research Questions**

1. How do boulderers perceive the Niagara Glen?
2. What are the perceptions of boulderers toward an environmentally sustainable bouldering community at the Niagara Glen?
3. How can boulderers at the Niagara Glen promote community empowerment in order to overcome barriers to a shared community vision?
4. How do participants practice bouldering at the Niagara Glen?

### **Scope of the Study**

This study focused on climbers who participate in the activity of bouldering at the Niagara Glen in Niagara Falls, Ontario, Canada. The Niagara Glen is a nature reserve situated in a gorge surrounded by escarpment limestone and is located along the Niagara River. The environmental and geological nature of the Niagara Glen allow for many different outdoor recreational experiences including bouldering, hiking, fishing, and geocaching. One of the

primary recreational offerings located in the Niagara Glen is bouldering. Bouldering at the Niagara Glen is made accessible by the many large limestone and sandstone boulders, which are perfectly featured for the activity of bouldering and provide many different challenges for climbers of all abilities. The Niagara Glen is known internationally as a bouldering destination, and is one of the most highly concentrated bouldering areas in Ontario with over 700 documented boulder problems (Roth, 2007).

### **Definition of Terms**

**Rock Climbing:** The act of scaling vertical rock formations. Rock climbing generally utilizes different types of safety equipment and hardware in order to protect the climbers on an ascent.

**Bouldering:** Bouldering is a form of rock climbing that utilizes large boulders for the purpose of climbing. Bouldering involves challenging oneself to the purest difficulty of movement and is not limited by the addition of excess gear and the fear associated with other styles of rock climbing. Bouldering is gymnastic in nature and often involves taking simple movements and deciphering the boulder problems sequence in order to ascend the climb. Boulder problems generally focus on individual moves, and completing a series of moves followed by an ascent of the boulder, which signals the completion of a “boulder problem.”

**Perception:** Perceptions have been defined as “the outcomes of cognitive processes used to obtain, organize and utilize information about stimuli” (Molzahn & Northcott, 1989, p.132).

**Empowerment:** A term that in reference to this research project means to “encourage, or claim to encourage, individual and community control over the planning and implementation of solutions to individually and locally felt problems” (Perkins, 1995, p. 767).

**Community:** “Individuals who may take collective action towards shared and specific attainment of goals” (Laverack & Wallerstein, n.d., p.3).

**Community of Practice:** A community of practice is involved in mutual engagement that binds members together into a social entity (Wenger & Snyder, 2000).

**Sense of Place:** Tuan (1974) suggested that spaces become places when people assign them emotional value. Sense of place has been referred to as an overarching general concept with a broad focus on individual and group meanings that are attributed to a particular setting.

**Sustainability:** “Humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs...sustainable development is not a fixed state of harmony but rather a process of change in which the exploitation of resources...and institutional change are made consistent with future needs as well as present needs” (Plummer, 2009, p. 68).

**Social Sustainability:** Social sustainability is based on the premise that “human needs cannot be sufficiently met just by providing an ecologically stable and healthy environment – if a society is indeed committed to sustainability, the equally legitimate social and cultural needs ought to be taken care of as well” (Littig & Griebler, 2005, p. 67).

**Environmental Sustainability:** In this study, environmental sustainability follows a similar definition to ecological sustainability. “Ecological sustainability...mainly aims to reduce the production and use of harmful substances to a minimum, so as to minimize environmental pollution, the exploitation of valuable resources as well as the so-called ‘use of the environment’ (Littig & Griebler, 2005, p. 66) .

Sustainable bouldering: The concept of sustainable bouldering in the context of this study explores the environmental vitality of the Niagara Glen and how bouldering participation may influence fauna and flora at the Glen for future generations. Additionally, sustainable bouldering also explores recreational vitality of the Niagara Glen, and is used as a tool to discuss whether or not recreation activities, including bouldering, can be practised sustainably at the Niagara Glen for generations to come thus sustaining this particular recreation practice.

### **Delimitations and Limitations**

This study was confined to focus groups interviews with local climbers who use the Niagara Glen for the purpose of bouldering. Focus group interviews occurred at “Climbers’ Rock” climbing gym in Burlington, Ontario and The Niagara Climbing Centre in North Tonawanda, New York state, as these gyms serve as central locations for climbers in the greater Toronto/Niagara area and the Buffalo/Rochester area. These facilities were appropriate for hosting focus group interviews, as both were equipped with private meeting rooms. In addition to focus group interviews, a series of four participant observations took place at the Niagara Glen Nature Reserve in order to observe community interactions first hand. Upon REB approval data collection occurred from July 26<sup>th</sup> through to November 1<sup>st</sup>, 2009.

One distinct limitation that presented itself almost immediately was the lack of interest initially in this research study leading to a longer than expected data collection period. In order to manage this limitation, the interviews were kept predominately focused, keeping all respondents on target and maintaining goal objectives through to the end of the focus group session. Participants were however given time at the end of the focus group to speak freely and identify other reactions that may not have been guided through the set list of questions. This became a valuable process as the questions themselves at times limited the depth of reflection on the part of the participants, and allowing for open discussion at the end provoked some very valuable data, which helped to answer the research questions.



### **Importance of the Study**

There are several reasons this study is both timely and important. First, the Niagara Parks Commission has implemented a land management plan, which threatens to severely limit if not eliminate bouldering from the Niagara Glen, thus dramatically affecting the future use and social sustainability of the Glen as a destination for bouldering. The possibility of bouldering access being denied to climbers could have substantial impacts to those who use the Glen as a place to practice this type of recreation. Eliminating climbing activities at the Niagara Glen also seems to be an extreme step in managing climbing activities as many options exist which can minimize bouldering impacts at the Glen, while still allowing the activity to be accessible. Some possibilities include educating climbers on appropriate minimum impact practices, encouraging the use of durable surfaces while accessing boulders and raising funds in order to assist in maintaining the park (Attarian, 1991). These proactive steps to encouraging environmentally sustainable bouldering are important as the recreational pursuit of bouldering at the Niagara Glen was also identified in a related study (see Thompson et al., 2008). Second, the climbing community is facing many access restrictions all across Ontario and the globe due to some of the environmental impacts associated with the activity. Although climbers are generally viewed as environmentally conscious, many of the influences of rock climbing affect the natural environments where climbing takes place (Attarian, 2003). In the Niagara Glen, damage to the local fauna and flora is a constant concern due to improper bouldering pad placement, removal of moss and lichen from the tops of boulders, social trail use, micro trash accumulation, and crowding (Ritchie, 2002). These issues of environmental degradation have influenced how the Niagara Parks Commission views climbers, and in order for climbers to demonstrate that they are environmentally conscious participants at the Niagara Glen, the findings from this study could potentially help to develop a unified vision for practice that identifies ethical guidelines to be used while climbing at the Glen. For this to occur, climbers need to come together and empower each other as a community with a capacity to change how they interact within the Niagara Glen

and promote environmentally sustainable bouldering practices. Through community empowerment and practice climbers may be able to change their current behaviours , and with the implementation of environmentally conscious guidelines for bouldering practice, the relationship between the Niagara Parks Commission and climbers may be strengthened leading to restrictions that are compatible with the needs of both the park and climbers. The goal of this research study was to assist in promoting community empowerment and practice by providing a venue where discussion about an environmentally conscious bouldering vision for the climbing community in Southern Ontario could be conducted.

Third, this study was also conducted to fill a gap in current literature on environmental and access concerns pertaining to the activity of bouldering. Current research literature explores the environmental concerns of rock climbing, not bouldering, and studies are generally based on quantitative measurements (see Kuntz & Larson, 2006; McMillan, Nekola & Larson, 2003) that do not consider the role of human-nature interactions. Although the perceptions of boulderers were identified in a related study, (see Thompson et al., 2008), the goal of this study was to expand this line of inquiry to explore perceptions of social and environmental sustainability and community empowerment and practice within the larger bouldering community, through a focus group approach to have a more thorough understanding about the social world of boulderers and its possible implications for environmental policy.

Finally, I hope to share the information collected in this research project with both the climbing community and the Niagara Parks Commission, in order to identify ways in which both groups can work together to inform environmentally sound practices at the Niagara Glen and to also promote a sustainable future for bouldering at the Glen. I also hope this study will be beneficial in adding to the existing research literature on issues pertaining to rock climbing and sustainability and will provide useful information on what steps can be taken in promoting sustainability and community empowerment within the climbing community.

## **CHAPTER 2 - REVIEW OF LITERATURE**

### **Introduction**

Bouldering is a popular style of rock climbing that is admired internationally, due in part to the simplicity of accessing outdoor climbing opportunities without requiring a great deal of knowledge pertaining to rock climbing safety. Additionally, bouldering participation requires minimal amounts of gear and thus is an inexpensive activity, making it more easily available for diverse groups of individuals. The simplicity of access to bouldering destinations in the past, along with inexpensive bouldering equipment and increased media exposure, have propelled the current popularity of bouldering as a sport, while simultaneously increasing access concerns in many of the areas where bouldering is most popular, including the Niagara Glen.

The increased popularity of bouldering along with increased concerns over access to bouldering destinations like the Niagara Glen, has created a need for exploring how climbers and park officials can better work together to inform policies regarding the practice of bouldering, and how the activity of bouldering can be practiced in a more sustainable manner. Therefore, the purpose of this study was to identify the perceptions of boulderers toward sustainable participation at the Niagara Glen in order to help inform future environmental policies and to help create a unified vision for future bouldering practices at the Niagara Glen. The literature review introduces a brief explanation and history of bouldering, a brief history of the Niagara Glen, environmental issues associated with rock climbing and bouldering, the sense of place concept and benefits of wilderness use, and community and empowerment theory.

### **Explanation and Brief History of Bouldering**

Bouldering is a category of rock climbing that involves using large boulders for the purpose of climbing. Bouldering is concerned with challenging oneself on the pure difficulty and movement of climbing, and is often practiced on steep overhanging rock features with minimal handholds, thus leading to at times very gymnastic movements. In other forms of climbing, participants must be concerned with placing rock hardware in the rock in order to ensure safety,

however, bouldering is practiced without the aid of traditional protective climbing gear such as ropes, hardware, and harnesses and instead uses foam crash pads to protect falls (Access Fund, 2004, 2006).

Bouldering has been practiced in some form since the 1870's, when climbers were utilizing boulders for the sake of scrambling in Fontainebleau, France. The late 1880's brought about a more serious pursuit of bouldering in Britain where Oscar Eckenstein began to boulder as a means to an end in itself, compared to the previous pursuits of bouldering as merely a means of training for big rock climbs and mountaineering. Bouldering progressed into the 1930's where Pierre Allain and the Bleausards began not only bouldering, but also recording feats on the stone of Fontainebleau. In the 1950's John Gill began bouldering in the United States and was one of the first to use dynamic movement as a means to ascend boulders. Gill also was the first to use chalk to increase friction while climbing (Gill, 2008). Bouldering took a step forward in 1969 when Gill (1969) in *'The Art of Bouldering'* recognized bouldering as a legitimate form of rock climbing and introduced a grading scheme, discussing grading as a "classification system" (p. 3) and discussing the B grade, B1-B3 as a range which identifies all difficulties.

It is widely accepted in the climbing community, however, that bouldering really began with the ascent of a boulder problem called Midnight Lightning in Yosemite Valley by Ron Kauk in 1978 (Takeda, 2000). Midnight Lightning quickly became one of the hardest boulder problems for the time, and due to its location in the heart of a popular campsite for climbers at Yosemite (camp 4) and the historical significance of the problem, Midnight Lightning remains one of the most sought after boulder problems in the world. The advancement of bouldering was continued through the 70's, 80's and 90's by Jim Holloway, John Sherman, Ron Kauk, John Bachar and eventually Chris Sharma, who became an icon of bouldering in the 1990's and continues to push the standards of bouldering today (Gill, 2008).

### **History of the Niagara Glen as a Bouldering Site**

The Niagara Glen became designated as a public space in 1894 after the Queen Victoria Falls Park acquired the property. The introduction of a staircase and the implementation of hiking trails made the lower gorge accessible to human use and in 1898, 1901 and 1902 several permanent pathways were constructed at the Glen (Ritchie, 2002). The Niagara Glen was established as a nature reserve in 1992 and is home to many diverse species of fauna and flora, including many at risk species such as the red mulberry and the dusky salamander (Ritchie). The Niagara Glen now consists of four kilometres of trails that wind through Carolinian Forest and large limestone boulders (Niagara Parks, 2008). The Niagara Glen receives 14 million visitors a year who use the park for numerous reasons including tourism, fishing, hiking, bird watching, dog walking, cycling, partying and bouldering (Roth, 2007). Due to the volume of diverse user groups and the current unrestricted use of the park, many problems influencing environmental sustainability exist at the Glen. These concerns include public overuse and at times abuse of the park, the public departing from the sanctioned trails and forming social trails to access different parts of the Glen, invasive species, excess garbage and litter, fire rings, vandalism, and damage to fauna and flora at the park (Ritchie).

One of the main concerns the Niagara Parks Commission is managing at this time is controlling the impacts created by boulderers. Bouldering has been practiced at the Glen since the 1980's, and in 1992 after banning roped climbing at the Glen, the Niagara Parks Commission in a letter to the Alpine Club of Canada, stated that bouldering was acceptable (Porter, 2006; Roth, 2007). Bouldering did not see a great deal of development until 1996, when Darrell Porter, Garry Valincourt, Pete Millard and Pete Cimasi among others began to take bouldering seriously and established the first boulder problems. Bouldering at the Niagara Glen has progressed rapidly and the Niagara Glen now hosts more than 700 documented boulder problems and continues to see more development as the popularity of this activity increases (Roth).

## **Environmental Issues Associated with Rock Climbing and Bouldering**

### **Impacts**

The question of whether or not rock-climbing practices, including bouldering, can be environmentally sustainable is an issue that sparks debate in many areas throughout North America. Rock climbing and bouldering have been regarded as activities that may not promote environmental sustainability. With increased pressure on parks due to the growing popularity of these activities, some suggest it may be time to reassess the future of these pursuits (Kyle & Chick, 2002).

Many rock-climbing disciplines have been condemned in the past for creating negative ecological impacts on the natural environment. Attarian (1991) identified management and climber concerns over the impact that increased climbing activities are having on the ecological sustainability of a number of areas in the United States. In attaining input from resource managers, Attarian identified a number of concerns related to increased popularity in the sport of rock climbing. Some of the concerns identified from fourteen different climbing areas were soil erosion and impacts to vegetation found on rock surfaces, improper disposal of waste, impacts to wildlife, bolting practices, visual impacts to rock surfaces and potential damage to historical and cultural sites (p. 3).

Attarian (1995) further identifies impacts to environmentally sustainable rock climbing practice by discussing the rising issues associated with the sport of rock climbing, focusing on the environmental issues associated with increased popularity and technological advancements of the sport. Similar to his previous work, Attarian discusses some of the issues associated with climbing as including impacts to soil, damage to vegetation, development of multiple trails, proper disposal of human waste, and wildlife disruption. Other impacts that are also discussed are the concerns around the visual impact of climbing on rock surfaces through the use of fixed anchors and bolts, impacts influencing the experiences of other user groups, and possible damage to historical and cultural sites (Attarian).

In Ontario, climbers have been accused of affecting the richness and diversity of land snails on the limestone cliffs of the Niagara Escarpment. McMillan, et al. (2003) sampled land snail communities along the escarpment in Milton, Ontario. By identifying the presence of land snails on unclimbed areas versus climbed areas of the escarpment, data comparisons found shell density to be five times greater in unclimbed samples. McMillian et al. found that fourteen species of land snails out of the forty they studied had notably greater frequency in unclimbed samples. These results led to recommendations identifying the need for management plans to be implemented on the Niagara Escarpment in order to create specific policies for recreational rock climbing so that further damage could be prevented.

Further, research by Kuntz and Larson (2006) also identified the differences in cliff face vegetation between heavily climbed cliff faces and areas with little to no sign of climbing presence. The results of this study also identified climbing as having negative effects on vegetation on cliff faces. The difference, however, in this work was the increased focus on difficult rock climbing (5.10 grades and up on steep cliff faces) and in this particular case, the researchers made recommendations that were opposed to the previous recommendations conducted by McMillian et al. (2003). Kuntz and Larson found more difficult rock climbing in the 5.10 and up range to have little effect on the composition of cliff face vegetation, leading them to recommend that climbing should perhaps be restricted with regard to the development of new climbing routes beneath these grades or on less steep terrain. Kuntz and Larson additionally suggest that all management decisions that relate to rock climbing along the Niagara Escarpment must be weighed against the new evidence uncovered in their study.

These studies (McMillan et al., 2003; Kuntz & Larson, 2006) suggest that although environmental issues around the activity of rock climbing exist, certain variables such as the difficulty of a route, may affect how much damage climbers are actually inflicting upon the environment. Of interest in this study was the recognition of difficult rock climbing (5.10 and up) having little effect on cliff face vegetation. This is interesting to note as bouldering grades

generally begin in the V0 range, which is equivalent to 5.10a and thus represent difficult climbing (Mountain Equipment Coop, 2008). Using Kuntz and Larson's (2006) findings as a guide, bouldering may not cause as much disruption to cliff face composition and arguments that support the claim that bouldering creates damage to vegetation found on the faces of boulders should at the very least be further explored in light of this new evidence.

Overuse by climbing groups has also been identified as a major issue affecting the ecological sustainability of wilderness areas where climbing is practiced. Attarian (2003) identifies overuse of climbing groups as a threat to long-term sustainable access in climbing destinations. Further, Attarian suggests that there are currently between 300, 000 to 500, 000 climbers in the United States and with the increased popularity of climbing, there are mounting concerns about human impacts on rock climbing environments. These impacts include damage to vegetation, human impacts to soil, the growing presence of litter, harassment of wildlife, noise, damage to historic and cultural sites, bolting practices and a variety of social and potential economic impacts. Attarian's work suggests that a great deal of the damage created is due in part to the quantity of climbers, and their impacts around climbing areas and not specifically to the rock or the activity of climbing itself. This is important to note as Attarian's article suggests that the activity of climbing in itself is not necessarily to blame for environmental degradation, rather it is the size of groups actively participating in and around the same area that may be contributing to increased environmental sustainability concerns.

Attarian and Keith (2001) describe in '*Climbing Management: A Guide to Climbing Issues and the Production of a Climbing Management Plan*' current issues related to unsustainable bouldering. Issues identified are climber developed social trails, which are used by climbers to gain access to climbing areas off of the main trail networks, liability, visual signs of climbing related activities, such as chalk and fixed anchors, noise, backcountry camping sites, new routes, and bouldering impacts.



From a bouldering perspective, the impacts to flora and fauna as a result of this activity are identified by the Access Fund (2004, 2006). Impacts identified for management consideration are chalk use as an aesthetic concern, impacts to vegetation, chipping and gluing of handholds in the rock, staging areas, or issues with soil and vegetation disruption around boulders as a result of frequent use, the approach, which includes issues around social trails, bouldering pads and their effect on the vegetation around the boulders and additional concerns around litter, pets, human waste and cultural resources.

Additional impacts created through bouldering activities are identified in a useful resource drafted by Love (2008), and available from the Southeaster Climbers Coalition, a grassroots organization that was formed in the southern Unities States, in order to sustain climbing and work with land managers to open new climbing areas (Southeastern Climbers Coalition, 2008). The article by Love is called '*Minimal Impacts in the Boulderfields*' and identifies some issues associated with bouldering practices specifically exploring the damage created through new bouldering development. Some issues presented in this document include impacts to endangered and sensitive fauna and flora, and damage to many ecological communities through unsustainable bouldering practices.

### **Strategies**

Attarian (1991) recommended that park management be involved in educating climbers on appropriate practice instead of creating restrictions in order to increase quality recreation experiences without creating social conflict. Attarian lists ways in which park management can be involved in initiatives to better educate climbers on ethical and environmentally sustainable rock climbing practices. Some of the ways in which education can take place are identified as developing bulletin boards in climbing areas to better educate and make climbers aware of the issues and ethical protocol in a specific location, raising money to assist with maintaining climbing areas, initiating partnerships with retailers to disperse information within their shops that helps to better educate climbers, developing educational material that promote minimal

impact climbing ethics and can be handed out to climbers when entering a climbing destination, introducing and including information about ethical climbing in instructional programs and getting involved with local climbing agencies to organize clean up initiatives and service activates in climbing areas (Attarian). Through creating relationships with climbers and initiating management practices that involve indirect techniques of controlling climbing impacts, Attarian suggests park managers can be successful in educating and preventing further damage caused by climbers and thus promote better relationships between climbers and management organizations, that help to both sustain a future for continued climbing practices while simultaneously encouraging environmental sustainability.

Attarian (1995) discusses a need for a renewed clean climbing ethic that “promotes stewardship and appreciation towards the vertical world and the surrounding environment” (p. 99). Minimum impact practices are also discussed as a method with which to promote clean climbing and are identified as techniques that have been initiated by climbers, land managers and grassroots climbing organizations to promote clean climbing. Attarian discusses the role and the need for outdoor educators to encourage these behaviours through educating, acting as role models when involved in climbing experiences, and being involved in service initiatives where educators include their students in initiatives that promote giving back to local vertical environments. Attarian also suggests using teachable moments to present topics related to the practices of clean climbing.

Attarian and Keith (2001) make recommendations for management agencies and climbers as to how these issues can be dealt with in order to make rock climbing a more environmentally sustainable practice. Attarian and Keith also make recommendations to construct a climbing management plan and provide suggestions for content that should inform the goals and objectives of a climbing management plan. Attarian and Keith emphasize “clearly defining the plan users, defining the scope and longevity of the plan, and conducting a thorough review of climbing activity by including members of the relevant user group” (p. 3). Attarian and Keith also include

resources of previous cases where climbing management plans and memoranda of understanding have been used, and have been successful in allowing the continuation of climbing activities, while successfully protecting natural resources.

The National Park Service U.S. Department of the Interior (2000) discuss strategies with which bouldering and rock climbing practices can be managed at Joshua Tree National Park in order to be environmentally sustainable. Under the climbing management heading, the management plan focuses on aspects of climbing that can impact park resources. The impacts identified are, “creation of social trails, impacts to soil and vegetation at the base of climbs, degradation of scenic values due to chalk and fixed anchors, and impacts to the microhabitats, including flora and fauna found on rock surfaces” (p. 40). Recommendations made in order to manage these issues would include looking at,

the integrity of natural resources, condition of plant and wildlife communities, condition of soil and surfaces, visual appearance of rock formations, density of climbing routes and bolts, levels of climber visitation to different sites, opportunities for new route exploration, conditions of fixed anchors on existing routes, commitment and administrative resources, level of awareness among park visitors of management objectives and strategies, climber and non-climber expectations, and impact mitigation needs and programs” (The National Park Service U.S. Department of the Interior, p. 41).

These recommendations were proposed in this management plan as ways in which to permit climbing in Joshua Tree and encourage a future for climbing practices, while at the same time through community interaction between climbers and park officials create more sustainable practices that will decrease the overall impact on the natural environment of the park.

In dealing with specific bouldering related issues affecting environmental sustainability, the Access Fund (2004, 2006) identifies management considerations for the practice of bouldering and makes recommendations for management agencies in dealing with ecological issues found at bouldering areas. The Access Fund also provides suggestions for outreach

opportunities such as where management agencies can express concerns to the audience of climbers. One of the more important recommendations identified by the Access Fund is the suggestion that communication between climbers and resource managers remain open and proactive with more of a focus on education and outreach.

The Southeastern Climbers Coalition (SCC) (2008) has developed literature on practices the community can apply in order to become better stewards of the land. One article used by the SCC that makes recommendations for promoting environmental stewardship is the '*Crag Educational Flyer*', which outlines acceptable wilderness practices for both climbers and non-climbers. Recommendations made in this flyer include, staying on existing trails, picking up garbage, obeying the rules and regulations associated with the different locations, keeping the trails clear from clutter to allow other users access, reporting any issues to proper authorities, and reporting any loose or dangerous anchors through to the SCC.

Love (2008) also identifies strategies in dealing with the impact created through bouldering participation and new bouldering development. Recommendations for becoming an environmentally sustainable user group include becoming knowledgeable about sensitive fauna and flora in order to avoid damaging these species through bouldering practices. It is also important for climbers while developing new areas and boulders to clean and prune the natural areas around the boulders in a way that minimizes damage to vegetation. It is also recommended that climber's only remove vegetation on specific hand and foot holds instead of removing moss and lichen from entire sections of a boulder. Further recommendations include taking pictures of the boulders over periods of time in order to identify any major impacts created through use, and using guidelines created through Leave No Trace Inc. to further minimize environmental impacts (Love, 2008).

### **Access Issues**

Many climbing related publications have also discussed specific access issues regarding the practices of rock climbing and bouldering. As the activity of bouldering is becoming the most

accessible and commonly practiced form of climbing, many of the issues identified in the climbing literature are in context to bouldering related areas and issues concerning access. The vulnerability of bouldering's future has been discussed in numerous climbing publications, and one of the prominent examples takes into account the access restrictions identified in Hueco Tanks, Texas.

One of the first major indicators of the fragility of bouldering's future was when access was restricted to Hueco Tanks State Historical Park in Texas. Bouldering at Hueco has gone through many changes in recent years. At one point Hueco had very few restrictions limiting the actions of climbers within the park. However, on September 1, 1998 restrictions were adopted in the park that included having free access to only the north mountain, one of four areas in the park, while the other three locations were only accessible via guided tours. Camping and access to the park had to be managed through limited permits, and all climbers wishing to enter the park for the purpose of bouldering were required to attend a 30-minute orientation. These restrictions brought the numbers of climbers down from 85,000 in 1996 to 17,000 in 1999. It was rumoured that these rules were implemented in order to protect rock art and anthropological artifacts and also to protect the fragile ecosystem that exists in Hueco, however, the Texas Parks and Wildlife Department never offered an adequate explanation for their actions, leaving many climbers outraged by the closures. (Cavlovic, Berrens, Bohara & Shaw, 2001; Jackson, 2000).

Most of these restrictions have remained along with periods of complete bans on bouldering at the park followed by periodic park closures at Hueco Tanks. In 2008, one of the most popular boulders in the park, the Mushroom Boulder, was closed to climbing in response to soil erosion as a result of foot traffic and crashpad placement from bouldering practices. The park eliminated access to this boulder over concerns that the increased erosion may pose a threat to buried native artefacts. This closure has created tension and concern within the climbing community once again, as the closure occurred without the consultation and involvement of climbers. In response, Hueco climbers have created the Hueco Tanks Climbers Coalition in order

to create a working relationship with the park and prevent occurrences similar to this from happening in the future (Roth, 2008).

Other access issues involving the activity of bouldering have been noted in recent climbing literature. Most recently issues around stash pads (when crash pads are left at a particular bouldering destination for future use), at the Colorado bouldering area of Mount Evans in Rocky Mountain National Park have created tension between different groups of climbers and park officials (Roth, 2008). Further issues regarding impacts created by boulderers have been identified in areas like Shawangunks, NY, where concern over informal trails, large groups of boulderers, increased impact through vegetation disruption and littering are being evaluated by park officials (Osius, 2004).

Currently, the Ontario Access Coalition, a chapter of the Alpine Club of Canada, is working closely with the Niagara Parks Commission to create a bouldering policy for the Niagara Glen Nature Reserve. Concerns similar to those previously stated, are also occurring at the Glen and threaten to change the way bouldering is practiced at this location in the near future. Ritchie (2002) makes specific references to bouldering related concerns contributing to a lack of environmental sustainability at the Glen. Some of the concerns identified are, disruption of species at risk that exist on top of the boulders, boulderers using unsanctioned trails and creating new trails in order to gain access to climbing areas, climber safety and liability, and concern over the aesthetic appearance of chalk on the boulders. Roth (2007), in the Climbing Magazine article '*Glen Nebula*', describes similar issues occurring at the Glen, based on an interview with former NPC Park Naturalist Robert Ritchie. In this brief article, Ritchie is quoted as saying, "At the present time, bouldering is allowed. [But it's also] under review...because of the sensitive nature of the Glen" (p. 54). This article was followed by a draft land management plan that was presented to the Niagara Parks Commission in September 2008, and in this draft the recommendation was made to "Eliminate bouldering activities in the Niagara Glen" (Vaughan, Middleton & Brown, 2007, p. 67). In response to this recommendation, the Ontario Access

Coalition (2008) urged climbers to write letters to the Niagara Parks Commission to tell them that banning bouldering is not the answer and to discuss why sustaining a future for bouldering is important. At this time, the Niagara Parks Commission has received close to 1000 letters from concerned climbers.

The issues addressed in this literature identify the effects of rock climbing and bouldering on the environment; however, very few research studies explore the issues associated with loss of recreation space to participants. The loss of bouldering and rock climbing practices to the participants could indeed create issues affecting a large group of active individuals, yet this potential loss is not discussed in much of the literature that explores environmental issues related to rock climbing. This gap in the literature needs to be filled in order to understand the implications of the potential loss to the physical, psychological, and social benefits created through sustained participation in climbing and bouldering.

### **Benefits of Bouldering Place Making**

Although bouldering and rock climbing practices have been criticized in part due to some of the environmental issues present at locations such as the Niagara Glen, other research literature has identified benefits leading to social sustainability created through direct exposure to wilderness and outdoor recreation activities (Brooks, Wallace, & Williams, 2006). Some benefits identified come from the experiences related to the sense of place concept. The term sense of place is described by Tuan (1977) as the attachment of emotional value placed on physical spaces, creating places of meaning. Tuan (1976) further addresses how space becomes an “intensely human place” (p. 296) by stating that humanistic interest is led by the “nature of experience, the quality of emotional bond to physical objects, and the role of concepts and symbols in the creation of place identity” (p. 269).

Also related to the conceptualization of place in this study, is the cognitivist model of ecological perceptions and its relationship to place described by Butz and Eyles (1997). Butz and Eyles in their reconceptualization of sense of place suggest,

Ecological dimensions of senses of place emerge from accumulated sets of perceived/known ecological affordances. They are the knowledges of a place's ecological characteristics that yield meanings because they are generated out of the interplay between the characteristics of a specific place-grounded environment and the socially constructed effectivities of the perceiver. These effectivities can be understood as life world elements which, like all aspects of life world, are shaped both by subjects' communications with others and their own instrumental interaction with the environment (p. 24).

This correlation of sense of place and the affordance of grounding place experiences through interactions with the environment helps to identify the association of place theory and its use in outdoor recreation literature. Additionally, this further highlights the importance of place-based attachment through direct use as is the case with bouldering participation.

Sense of place is a term that has often been associated with outdoor recreation practices by leisure researchers. Sense of place is identified by Stokowski (2002) as "an individual's ability to develop feelings of attachment to particular settings based on combinations of use, attentiveness, and emotions" (p. 368). Important to this study are the ideas expressed by Stokowski that attach personal and social identities to community, and stress the importance of place in strengthening community relationships. Stokowski also identifies the creation of sense of place as very important to one's sense of wholeness and that "the story of one's life is always the story of one's life in relation to others and in relation to the meaningful places created and contained in one's surroundings" (Stokowski, p. 373). The psychological connections made by climbers to the Niagara Glen are important to identify in this study, as it is important to understand what elements of identity and community interactions may be lost with increased access restrictions or gained through continued use with a greater presence of environmental and socially sustainable practices.



Brooks, Wallace and Williams (2006) provide evidence that suggests “places and ongoing leisure pursuits act as relationship partners” (p. 333). Brooks, et al. identify three main contributors to place bonding in their article. The first contributor is Time and Experience in Place, where the accumulation of a participant’s history in visiting a location contributes to place bonding. The second contributor they identify is Physical and Social Interactions in Place, where relationships with a place (in this case Rocky Mountain National Park) are cultivated through social and physical interactions with a place in the outdoors. The final contributing factor identified was Self Identity Affirmation, where thoughts and behaviours of the participant were directed toward identifying one’s self in relation to a particular place (pp. 337-344). Each of these contributing factors identifies wilderness experiences as important to a participant’s relationship with place, thus identifying the importance of recreational experiences in nature.

Smaldone, Harris and Sanyal (2005) identify an individual’s relationship to a place as a connection based on the “creation of meaning for that place as an emotional bond between the person and place develops over time” (p. 398). Smaldone, et al. also identifies place as a collection of,

...memories, ideas, feelings, attitudes, values, preferences, meanings and conceptions of behaviour and experiences...At the core of such physical environment related cognition is the ‘environmental past’ of the person; a past consisting of places, spaces, and their properties which have served instrumentally in the satisfaction of the person’s biological, psychological, social and cultural needs (p. 399).

Smaldone and colleagues identify the strength of wilderness experience in the context of an individual’s needs, and attaches meaning to the relationship an individual has with a wilderness area, thus identifying some of the benefits connected wilderness recreation.

Thompson, Hutson & Davidson (2008) argue through exploring the perceptions of two long time climbers who have bouldered at the Niagara Glen for more than 12 years, that bouldering “experiences go beyond the specific recreational activity of scaling rocks to include

many other elements” (p. 6). Of importance in this study were the dimensions contributing to the ‘sense of place’ concept. The bouldering experiences described in this study were interpreted as experiences that contribute to memories based on environmental signals that led to feelings of place sentiment. Certain characteristics of the environment were identified as adding to the overall experience of being in the Niagara Glen, including proximity to the water, and the aesthetics of the scenery in the Glen. Environmental characteristics of the Niagara Glen were also perceived as vitally important to experiences and enhanced place sentiment in this location, and thus added depth to the perceptions these individuals had in the Glen. Similarly, environmental degradation was perceived through unpleasant memories that detract from positive experiences. Social interactions were also identified as important in enhancing place sentiment, and the interactions that these individuals had with others while bouldering in a meaningful environment like the Niagara Glen, was identified as creating a distinct ‘sense of place’ for these participants that could not be experienced in other settings (Thompson, et al.).

Williams (1996) identifies benefits associated with the activity of rock climbing in enhancing motivation, acknowledging the enjoyment brought on by the movement of climbing and the benefits of physical activity. Williams emphasized the importance of the environment and wilderness experiences created through climbing. Climbing was identified as a vehicle that contributes to experiences in the outdoors and enhanced enjoyment of wilderness areas. Williams also identifies climbing as a means to reaching feelings of self-actualization and wholeness and in describing why individuals rock climb states, “They demonstrated deeper almost spiritual, feelings that relate to self actualization and internal, personal attitudes” (pp. 101-102). Importance is also placed on social interactions through rock climbing, and participation in the activity is synonymous with time spent in the company of friends (Williams, 1996).

Johnson (2002) expresses the many benefits of wilderness experiences through outdoor recreation on nourishing the spirit and providing positive psychological benefits. Johnson identifies six benefits of wilderness experiences. The first is ‘Enduring’, where in “wilderness we

encounter the enduring because we come face to face with ancient things and timeless cycles, and it is this direct encounter that makes our sojourn in wilderness a moving spiritual experience” (p. 29). The second benefit is the ‘Sublime’ where “By humbling of human aspirations and foibles, experiences of sublime can lighten our spirits so that we enjoy the immediate and simple pleasures found in wilderness” (p. 30) The third benefit of wilderness experience is ‘Beauty’ where “The beauty of wild nature helps to engender the spiritual peace and comfort we find there” (p. 30). The fourth benefit to wilderness experiences is ‘Competence’ where “when met successfully, challenges are likely to be perceived as empowering and as proof of our capability and worth and these feelings contribute in turn to the calm, quiet spirit often experienced in the wild” (p. 30). The fifth benefit is ‘Experience of Peace’ where “identification with the enduring aspects of nature, minimization of ordinary concerns before nature’s sublimity, physical removal from the sources of everyday anxieties, experience of beauty, feelings of competence...all contribute to the mental calm so often found in wild nature” (p. 31). The final benefit is ‘Self-forgetting’ where through “minimizing the importance of our individual selves...nature’s beauty draws us beyond ourselves and into rapt fascination with our surroundings” (p. 32).

Hagvar (1999) expresses benefits similar to the work of Johnson and the topic of the erosion of mental values is discussed, identifying five values that are being eroded through the reduction of biodiversity. The values discussed are, ‘the value of wondering’ where “a collection of unexplained wonders is a valuable mental harvest from a visit in nature, and ‘the value of aesthetics’, where through the “global reduction in the quality of nature means that an important, traditional source for human art and culture is shrinking” (p. 166). Other values identified are the ‘value of exploration’ where exploration is identified as important in accumulating experiences in nature; the ‘value of nature as a mental anchor’ where protected wilderness is identified as something that is unchangeable and safe, where the possibility exists for an individual to return and be recharged; and the final value is ‘the value of nature to maintain identity’ where

“conservation of virgin nature is a matter of preserving identity of the earth, a value for human minds” (p. 167).

The benefits of wilderness exposure to human well being are also discussed by Baker (2005) by describing the increasing trend towards urbanization and the decline of environmental advocacy due to the loss of undeveloped land. The importance of promoting ‘landfull’ experiences in nature through active participation is discussed in order to identify the personal and ongoing relationships participants have with the land and with experiences in the land. Baker states, “The essence of landfullness is when the personal process becomes less intentional and more a part of our identity in other words, relating to the land is a part of who we are” (p. 270). Relationships with the land are also identified as influential in creating levels of landfullness between participants and nature. One of the benefits identified was being deeply aware, where the participant identifies where they are, what is around them, and who is around them. Another benefit was interpreting land history and natural and cultural history. The participant through being aware of their environment is able to understand how the land has changed over time, identify who may have lived in the area in the past, and the historical relationships attached to the land. Sensing place in the present is also identified as a benefit to landfull experiences with nature, where participants take time to understand the uniqueness of the environment, and what that environment means to them personally. The final benefit of encouraging landfullness is the connection to home, where participants identify how land and home are connected and not independent of one another (Baker, 2005).

This research literature identifies the benefits produced through exposure to wilderness areas and recreation activities in wilderness. Through outdoor recreation experiences, participants are exposed to nature and social interactions, which may strengthen their physical, social and psychological well-being and perhaps reinforces their personal ‘sense of place’ in nature settings. As relationships with a location are reinforced through community interactions and recreational pursuits, pro-environmental behaviour and advocacy for the protection of these areas may be

strengthened thus benefiting both the participants' attachment to the place and the natural (or environmental) sustainability of the location (Halpenny, 2006). However, a need exists for more concrete information identifying the benefits of bouldering and rock climbing practices on participants and the locations where climbing and bouldering practices occur. Although specific benefits generated through bouldering participation were explored in a related study (see Thompson et al., 2008), more research needs to be conducted in order to understand the potential loss of person-place relationships if activities such as bouldering are eliminated in areas like the Niagara Glen as well as clarify what is to be gained if sustainable outdoor recreation practices such as bouldering continue. To support this notion, further research conducted by Halpenny also identified an important link between place attachment and pro-environmental behaviours. Further research may extend this reasoning and explore the effects of eliminating human use in wild locations in order to identify the impact on further wilderness sustainability. Further research may also identify that eliminating human participants could reduce pro-environmental behaviours and advocacy for wilderness protection.

### **Community and Empowerment**

In order to understand the perceptions of climbers toward sustainable bouldering, the climbing community needs to identify a shared community vision and through this vision promote a greater community of practice. Community of practice establishes an organizational methodology which encourages members of a select community to organize themselves and through the discernment of shared knowledge devise plans of action in order to deal with locally felt problems (Wenger & Snyder, 2000). In order to identify a community vision this study explored how the bouldering community can potentially become proactive within its own culture in encouraging environmental and socially based sustainability, leading to a future where bouldering can be continually practiced at the Niagara Glen. Identifying what it means to be a community and how a community can become empowered to make changes is important in identifying what steps need to be taken in promoting change.

Community development as described by Frank and Smith (1999), “should be based on respecting people, improving the quality of living, appreciating and supporting cultural differences and being good stewards of the land, water and wildlife” (p. 5). Community development also should be a “long-term endeavor, well planned, inclusive and equitable, holistic and integrated into the bigger picture, initiated and supported by community members, or benefit to the community, and grounded in experience that leads to best practice” (Frank & Smith, p. 6). This document lends many helpful methods in organizing community development and the connections made between cultural, social, economic and environmental matters, is relevant in how we look at the community of climbers with vested interest in bouldering at the Niagara Glen. Developing a process as described by Frank and Smith should involve “building support, making a plan, implementing and adjusting the plan and maintaining momentum” (p. 25). By having an inclusive process that allows all members to work as a team, the community of boulderers may have the ability to inform change and promote power within the group. Part of the focus of this research project was to understand how climbers as a community can implement group empowerment, from which as a unified group, climbers can potentially articulate and voice their concerns about access restrictions and promote their vision toward sustainable practice.

Empowerment theory is identified by Perkins and Zimmerman (1995) as a theory that links “individual well-being with the large social and political environment” (p. 569). Perkins and Zimmerman dissect empowerment theory and identify the themes that are being used to inform application. Empowerment is identified as an ongoing process that is intentionally driven towards involving the local community, and involving critical reflection, group participation, and caring. Empowerment is also described as a process where member participation is enhanced through organizational structures and thus goal achievement within the group can enhance quality of life (Perkins & Zimmerman, 1995).

Empowerment is described by Speer and Hughey (1995) as “the manifestation of social power at the individual, organizational, and community levels of analysis” (p. 730). Speer and

Hughey also state “Power may be conceptualized as a multidimensional phenomenon; of particular interest to community organizing is the dimension concerning instruments of social power” (p. 731). Community organizing is also discussed by Speer and Hughey as vitally important in the empowerment process, as organized people can lead to social power. Speer & Hughey state,

Participation in a community organization provides experience that challenges individual cognitions of social power and provides a collective context through which emotional reaction to that power can be processed or reflected upon. Moreover, organizational participation supplies a behavioral avenue through which an individual’s cognitive insights and emotional responses can be acted upon (p. 734).

Perkins (1995) also evaluates areas of organizational, community, social intervention, societal-level and policy and how each can be based on empowerment. Important to this study is the section that explores empowerment through grassroots settings. Perkins identifies grassroots settings as small scale and local groups that look at issues around environmental action, community development and consciousness-raising groups among other issues. This is important in the context of this study, as the community of boulderers represent a small-scale group that is involved in issues around one specific location, the Niagara Glen. Identifying concern around environmental action is important, as the community vision created for this group could be used to inform sustainable, environmentally conscious behaviors and actions.

Empowerment being a vehicle towards group participation is important in the context of the bouldering community. The bouldering community in the past has been identified as a group of individuals who have a common recreational interest. Recently however the ‘community’ ideal is becoming important as the access restrictions threatening to eliminate bouldering in the Niagara Glen will affect not only the individuals who use this location for their recreational pursuits, but the bouldering community as a whole.

If boulderers who use the Niagara Glen wish to have their voices heard on matters of access, they may be able to do this more effectively by having a unified vision which is informed through empowered community participation and practice. Currently, this community vision does not exist, and many of the examples provided on what organizations in the United States are doing to promote access are not occurring at the Niagara Glen. An organization that does exist to promote access in climbing areas in Ontario, The Ontario Access Coalition (OAC), has been effective in securing the access of many climbing areas throughout the province. However, this organization may need more support from the community of climbers in Ontario in order to have a greater effect in future policy development including that of the Niagara Glen (Ontario Access Coalition, 2008).

The perspectives of climbers who use the Glen need to be heard in order to promote community empowerment promoting social sustainability and manage many of the issues affecting the Niagara Glen. Through this, a vision of environmentally sustainable bouldering may be created, which potentially may help reposition climbers as an environmentally conscious community. It is hoped that this will promote strengthened relationships between boulderers, the Niagara Parks Commission, and the natural environment and that through these relationships bouldering may be sustained in this location for future use.

### **Conclusion**

The proposed access restrictions as identified through the Niagara Parks Commission's *Land Management Plan* are encouraging climbers to evaluate how they utilize the Niagara Glen for the purpose of bouldering. The evaluation of problematic environmental practices in rock climbing were identified in order to understand the current issues influencing management bodies such as the Niagara Parks Commission, and also to identify the barriers climbers will have to overcome in order to sustainably practice their pursuit. Currently we know that participants have been bouldering at the Niagara Glen for many years and that the actions of participants have not been properly evaluated, in order to identify their direct impact on the physical environment of



the Niagara Glen. Therefore, it is important to understand how participants perceive the Glen, and it is also important to properly evaluate the perceptions of participants toward becoming an environmental and socially sustainable and empowered bouldering community.

Benefits and the sense of place concepts were also discussed in order to identify what recreational participation in nature means to different user groups, and how participation in the outdoors can benefit the lives of those who participate in outdoor recreation activities like bouldering. Nature areas like the Niagara Glen were identified in wilderness research literature as locations that have the potential to create feelings associated with place sentiments for participants, which have the potential to benefit personal well-being and pro-environmental behaviors. The importance of creating sustainable bouldering practices, and examples of environmentally sustainable bouldering practices were also evaluated in this literature review, as to identify what is being done in order to inform best practices for bouldering participation in outdoor environments. It was also essential to observe the actions of participants at the Glen in order to see whether or not best practice is being undertaken at this location and depict the actions of boulderers toward environmentally sustainable practice. The importance of nature exposure through recreation was also discussed in enhancing participants' feelings of environmental advocacy for a place and fostering sustainable practice. Finally, community and empowerment theories were discussed as possible ways to formulate solutions for creating environmentally sustainable use and a symbiotic relationship between climbers, organizations like the Ontario Access Coalition, and park management organizations such as the Niagara Parks Commission.

It is important in this study to understand how boulderers at the Niagara Glen promote community in order to overcome barriers to a shared community vision and to promote feelings of empowerment. Therefore, the actions of similar organizations such as the Access Fund and the Southeastern Climbers Coalition were identified as examples of what similar climbing organizations are presently doing in the United States, to foster environmental and socially sustainable relationships with both the land that they use for climbing purposes and the land

owners and park officials who own and protect the land. This literature review attempts to create a balanced overview of the issues facing the activity of bouldering, bouldering and climbing communities, and the natural environments where bouldering and climbing take place.

## **CHAPTER 3 – METHODOLOGY**

### **Theoretical Framework and Overarching Design**

As stated in the introduction, the Niagara Glen is currently going through changes that will affect the future of recreational pursuits at the park. By having a better understanding of the the environmental issues caused by the recreational use of this location, climbers' perceptions of the feasibility of sustainable practice needs to be understood in order to inform future policy and guidelines dictating responsible bouldering practices now and in the future. Additionally, the future of bouldering community development at the Niagara Glen is explored in this study. It was also important to explore the person-place relationships participants have with the Glen and how this location has created a particular sense of place, which hopefully may act as a catalyst to promote environmental advocacy and more responsible community use.

### **Methodology**

The methodological framing of this study is action research. Action research is committed to bringing together social analysis that reflects collective “self study of practice, the way in which language is used, organization and power in local situations, and action to improve things” (Kemmis & McTaggart, 2005, p. 561). Action research is also described as:

A participatory, democratic process concerned with developing practical knowing in the pursuit of worthwhile human purposes, grounded in participatory worldviews which we believe is emerging at this historical moment. It seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people, and more generally the flourishing of

individual persons and their communities (Brydon-Miller, Greenwood, & Maguire, 2003, pp.10 -11).

Action research purposefully attempts to become part of a process of change, by allowing people in a program or organization to become engaged and part of the change process. Additionally, action research respects and is dependent on the knowledge of participants, and helps participants confront and work through a variety of issues (Brydon-Miller et al. 2003). Action research “should contribute to fundamental change as well as understanding” (Fawcett, 1991, p. 631) by helping participants to confront their own problems in order to solve those problems collaboratively (Patton, 2002).

Action research falls under the framework of applied research, as applied methods relate basic theories to real world problems and experiences and tests the applications of theoretical concepts (Patton, 2002). Applied research is limited to research questions that focus on a specific condition in a current time and place, where basic research has the ability to generalize across time and space (Patton, 2002). This methodological framework informs and helps to create recommendations as researchers are able to use their personal insights and may become close to the problems under study (Patton, 2002). Action research, through the use of applied research designs, also focus attention on the behaviours and actions of individuals who are experiencing real world problems and the participants are chosen due to their proximity to the current issue as opposed to being chosen due to convenience and ease of access (Fawcett, 1991).

Action research has a history of complexity, as it relates to a branch of learning that does not relate to any singular academic discipline, but is a method of research derived from many fields of study (Brydon-Miller et. al, 2003). Elements of action research have been utilized by the likes of John Dewey in his educational experiments and in early labour organizations in the United States and in Europe. Furthermore, in the 1940’s, Kurt Lewin introduced action research methods in the United States making collaborative research a central interest to many social scientists (Brydon-Miller et al.).

The one common theme among all of these approaches to action research is the question of how can knowledge be generated that is both “valid and vital to the well-being of individuals, communities, and for the promotion of larger scale democratic social change?” (Brydon-Miller et al, p. 11). To answer this question, Brydon-Miller et al, state:

we embrace the notion of knowledge as socially constructed and, recognizing that all research is imbedded within a system of values and promotes some model of interaction, we commit ourselves to a form of research which challenges unjust and undemocratic economic, social and political systems and practices (p.11).

This statement challenges the views of positivistic knowledge by apposing the view that research must remain objective, and identifies the importance of knowledge created through the complexities of personal interaction and community reflection.

This study was based on action research methods, presenting itself as a way to actively promote solutions to specific problems. Action research follows the lines of an applied formative structure with the intention of contributing findings that support new knowledge. This new knowledge can contribute to the topics of sense of place, community empowerment, and sustainability as they relate to bouldering practices and future environmental policy. This is discussed more thoroughly in chapter 5.

Overall, this study was concerned with assisting a community of boulderers, by providing information collected from focus groups that identifies how or if the bouldering community can promote positive changes at the Niagara Glen for both the bouldering community and the environment. Action research led these focus group discussions by allowing participants to openly examine issues affecting sustainable bouldering (both from an environmental context focusing on making the practice of bouldering more environmentally sustainable, and also from a social context, allowing bouldering to continue or be “sustained”) at the Niagara Glen. Additionally, various solutions were considered for practice.

Participants identified how they viewed current behaviours at the Glen and then commented on where they would like to see their actions at the Glen change. Participants in all focus groups spent a great deal of time discussing potential solutions to current problems facing their continued participation at the Glen, and discussed the role of bouldering participants in becoming more active in promoting sustainable bouldering.

### **Ethical Guidelines**

Through action research this study involved working with a group of distinct individuals, each with a vested interest in the issues around bouldering at the Niagara Glen. Thus, the importance of adhering to strict ethical guidelines and confronting ethical issues during the entire research process was crucial. As outlined by Kvale and Brinkmann (2009), seven ethical guidelines should be followed in maintaining ethical accountability. The first is the thematizing stage and in this stage the purpose of study was to both acquire new knowledge on perceptions of climbers, community empowerment, and sustainability and also attempt to use this knowledge to improve the human and environmental situation being investigated.

In the designing stage, ethical issues involved obtaining informed consent from the participants as well as identifying and securing confidentiality. The consequences of this study were also discussed with the participants as in this case, the consequences of what might be identified through the study may have implications on future bouldering practice at the Niagara Glen Nature Reserve and on the bouldering community as a whole in Ontario.

During the third stage, the interview situation, the interactions, and consequences of the interview were taken into account. In this study, I conducted focus group interviews with participants that at times presented strong opinions and emotional attachment to the topic presented. Because of the open discussion common in focus groups, tensions at times arose, but at no time did stress from the discussions create any noticeable conflict, nor did it appear to influence changes in perspectives or understanding. The interactions between participants were

constantly monitored during the focus groups, and a positive and non-threatening environment was maintained.

During the transcription stage of the research process, attention to the protection of confidentiality was required in order to inform ethical validity. The transcribed text collected during the focus group interviews accurately portrayed the participants' statements in a way that was accurate and truthful. In order to maintain a high ethical standard in this process, member checking was attempted where I endeavoured to provide transcribed text to a number of participants in order for them to confirm their statements as accurate or inaccurate as well as give them a chance to elaborate further on their opinions and ideas. Member checking was somewhat successful as a small sample of participants was willing to evaluate and remark on the accuracy of their opinions and ideas. The statements taken from these participants after the member checking process, identified consistency in the transcription and data analysis of their ideas. No concerns were identified representing an inaccurate portrayal of their statements.

The final stage was reporting the data, and in this stage of the research process it was again important that confidentiality was maintained throughout the final document. It was also important to evaluate the consequences of the final report and how this research may influence the participants. Vital questions that needed to be taken into consideration during this process include the following: How will this research affect the future of bouldering at the Niagara Glen? How does this research portray boulderers? How does this research help to inform and add to the current literature on bouldering community, and sustainability in outdoor recreation?

The most important element informing ethical practice was the application to the Brock University Research Ethics Board (REB). An application was approved on July 7<sup>th</sup>, 2009 and no work was conducted regarding this study until after this date. Once the study was approved, REB guidelines were followed informing all practices in this research project.

## **Methods of Data Collection**

Focus groups were one of the data collection methods used in this study. A focus group usually consists of a number of individuals led by a moderator. The interviewing is non-directive and encourages many different views about a specific topic, which is introduced by the moderator. The goal of a focus group is not necessarily to come to a consensus, but rather to promote different views on a specific topic (Kvale & Brinkmann, 2009).

Focus groups are valuable as they are well suited for exploring new topics and identifying new perspectives. The interaction between different individuals allows for expressive, spontaneous, and emotional views that may not occur in more traditional individual interviews (Kvale & Brinkmann, 2009). Generally, a variety of different focus groups were implemented as to provide a series of different perspectives and therefore increase confidence in the emergent patterns (Patton, 2002). Focus groups also have the ability to unearth useful information that is not easy to identify or reach in individual memory, and can assist in the investigation of memories and knowledge that may seem at first unimportant to the individual, but through interactions with others become crucial pieces of information linked to everyday life (Kamberelis & Dimitriadis, 2005)

In this study, I conducted five focus group interviews in order to provide the opportunity for many individuals who are a part of the climbing community in southern Ontario to voice their opinions on issues associated with the Niagara Glen and its current access issues. Through these focus groups, I collected information related to perceptions of the Niagara Glen, perceptions on sustainable bouldering at the Niagara Glen (in both an environmental and social context), how boulderers can promote community empowerment in order to overcome barriers to a shared community vision, and also gained an understanding of how bouldering is practiced at the Niagara Glen. These four questions were imperative in understanding the multiple elements around the interactions of participants at the Niagara Glen. Through focus groups, discussion, and interactions among bouldering participants with interest in the future of the Niagara Glen, the

goal of this study was to deepen understanding about the social world of boulderers as well as identify barriers to sustainable bouldering practices and provide information on what steps the community can take toward promoting sustainable practices.

Another method that was used to inform further knowledge in regard to this study was the collection of historical perspectives through literature evaluation. Patton (2002) states, “Historical information can shed important light on the social environment. This history of a program, community, or organization is an important part of the context for research” (p. 284). It is important in the context of this study to understand both the historical background of bouldering as a form of rock-climbing and the influence it has had on shaping current communities that exist as a result of the ongoing popularity of bouldering. I was also interested in understanding the history of access issues in the sport of rock climbing and bouldering and how these impacts have shaped the current perceptions among the global community of rock climbers and boulderers. In understanding both the history of the activity and the previous concerns around access in different areas of the world, I was able to derive a greater understanding and have further context with which to identify the current problems facing the bouldering community at the Niagara Glen.

The final method that was used to inform new knowledge, leading to a greater understanding of boulderers’ perspectives was participant observation. Participant observation as identified by Patton (2002) is “the circumstance of being in or around an on-going social setting for the purpose of making a qualitative analysis of that setting” (p. 262). Participant observation is valuable as it allows the inquirer to have the ability to understand the context within which participants (in this case boulderers) interact in their natural environments. Participant observation is also valuable as it allows the inquirer to rely less on preconceived conceptualizations of the activity and setting, and allows for first hand discovery (Patton). The inquirer may also have the ability through direct observation, to discover new knowledge that no one has ever paid attention to, as most participants generally take activities for granted due to



routine frequency (Patton). The inquirer may also have the opportunity to collect information that may not have come out in the focus group interview sessions, as participants may feel more relaxed in the natural setting of their activity. Finally, through observation, the inquirer will have first hand knowledge with which to draw on during interpretations and analysis of data (Patton).

Through participant observation, I collected data that identified the actions and interactions of boulderers while participating in bouldering activities at the Niagara Glen. Observations were an important part of trying to answer research question number four, which asked how participants practice bouldering at the Niagara Glen. I was able to observe the interactions between climbers in their personal social groups, interactions between climbers and non-climbers, and interactions between climbers and their natural surroundings. I was also able to identify whether or not the actions that take place while at the Niagara Glen were conducive with environmentally sustainable practice, and I was able to evaluate whether or not boulderers utilize minimal impact strategies while participating in climbing activities.

### **Data Collection**

There are many advantages of collecting data through focus group interviews. Focus group data collection is cost effective, as researchers can collect data from more people in the same amount of time that it would take to interview an individual participant. Interactions among many different participants can also enhance the richness of the data, as focus groups allow participants the opportunity to interact and co-construct ideas through the interview process. The extent to which participants agree or disagree with individual perspectives may become clear, which can provide a diversity of views. Finally, the focus group process can also create an enjoyable experience for the participants in the study (Patton, 2002).

The constant comparative method was used for data analysis and was appropriate to use with focus group data collection. Constant comparative is a method that “involves systematically examining and refining variations in emergent and grounded concepts” (Patton, 2002 p. 239). In other words, constant comparative involves developing theory through the collection of data.

Data collection in this case was carried out through focus group interviews, and through this method, themes developed and the relationships between themes was able to emerge. As more data is collected, data can be compared and theory can develop and change as more information is gathered (Willis, 2007).

One data collection method used for this study was audio-taped focus group interviews. There were a series of five separate focus groups, thus allowing for a significant number of participants to interact in the study and also to promote the constant comparative method. Through the five separate focus group sessions, conducted from late July, 2009 through to November 1<sup>st</sup>, 2009, twenty-six participants (nineteen men and seven women) were interviewed, and each focus group ran for approximately one hour.

The first focus group occurred at the Niagara Climbing Center in North Tonawanda, New York, and included eight participants, six men and two women. All other focus groups occurred in Burlington Ontario at Climbers Rock. The second focus group was made up of five participants, four men and one woman. The third focus group was made up of only two participants both male. The fourth focus group was made up of five participants, two women and three men and the final focus group involved the participation of five participants, two women and three men.

There was one moderator present at all focus group proceedings and one note taker was present at each meeting to take observation notes in order to compare names to voices in further analysis of the data. Each individual was initially approached on the basis of their experience at the Glen (this ranging from very little experience at the Glen to many years of experience), however this criteria changed slightly as the initial focus group at the Niagara Climbing Center included participants whom had not yet visited the Niagara Glen. These participants were allowed to participate, as they represented new bouldering participants, and they showed a great deal of interest in issues affecting the future of bouldering at the Niagara Glen. Additionally, these

participants stated that they intended on going to the Glen, and thus wanted to learn more about what issues are affecting this location.

Participants were either identified through a local gatekeeper, or were made aware of this study through flyers distributed at local climbing gyms. A gatekeeper is regarded as an individual or group of individuals who grant entry into the field of study (Patton, 2002). In this case, a member of the Ontario Access Coalition, an organization representing climbers across Ontario, at times filled the gatekeeper role. Entry into the field was negotiated through a member of the OAC, who was able to identify the most interested individuals and provide contact information. Additionally, two other gatekeepers were used in locating interested participants outside of the grasp of the OAC. One gatekeeper provided information on potential research candidates in the North Tonawanda/Buffalo region, while another provided information on candidates within a University community.

Once participants were identified each individual received a letter of invitation. Participants proceeded to contact the researcher if they decided to participate in the study. This ensured that participants did not feel coerced to participate. Those individuals who chose to participate filled out a letter of informed consent, which educated participants about the purpose of the study and identified the main features of the research project. The letter of informed consent also declared any risk associated with the study as identified through the Brock University Research Ethics Board (REB). Confidentiality was discussed with participants upon entering into the focus group. Kvale & Brinkmann (2009) identify confidentiality in research as a process where “private data identifying the participants will not be disclosed” (p.72). Participants in this study were made aware of issues around confidentiality and were provided with aliases during the study to protect their identity. If information was collected in the data that had the potential to identify certain participants in the study, then the participants had to agree to the release of this information (Kvale & Brinkmann). In this study this concern was not recognized and no information was identified linking specific participants to this study.

Upon entering into the focus group, consequences of the study were addressed.

Participants were made aware of the possible harm in a study of this type and also of any benefits to participating in these focus groups. Clarification was needed almost immediately as some participants believed that this study was being conducted in order to reinforce the role of boulderers as environmentalists and to help benefit their access to this location. These perceptions existed in part due to my active role as a bouldering participant in the community, and thus I had to further clarify the purpose of the study, and identify my role clearly. I also had to emphasise the consequences to not only the individual, but also the overall group as information collected from these focus groups may influence future policy development, and have an influence on how climbers are viewed by those informed by this study. Once these clarifications were made participants maintained that their interest in participating in the focus group had not changed. Participants were also informed of their right to withdraw from the study at any time and they were also informed of their right in not answering questions that they feel uncomfortable answering. Participants were reminded of the information available in the informed consent form, as well as the consequences of the study in both the briefing and debriefing in order to inform them as thoroughly as possible to the purpose and possible outcome of the study. Rapport was maintained with participants throughout the focus group sessions and was accomplished through creating an environment of openness, friendliness, and mutual respect along with a flexible attitude towards the knowledge being shared (Willis, 2007). Data collection also occurred through participant observation. As an insider and participant observer within the community of boulderers, I had the ability to depict an emic perspective, where I not only saw what was happening, but also understood what it is like to be a part of the activity and setting (Patton, 2002).

Observations occurred at the Niagara Glen Nature Reserve over four separate periods of time, observing the actions of a total of thirty-one individuals, twenty-one men and ten women, and observations were recorded intermittently throughout the day. Observations were attempted

on six different occasions, however on two of these occasions boulderers were not found participating at the Glen, and thus these observation attempts were proven unsuccessful.

Each observation period occurred with no less than one week separating each observation period in order to avoid overlap of information. All observations were taken using the observation template and were organized by date. The observation template identified specific actions that boulderers may or may not act upon while bouldering at the Niagara Glen. The template was broken down into sixteen different statements, all of which could be answered in either a yes or no manner. The statements used in the observation template can be found in figure 4.3.

### **Data Analysis**

Data analysis was conducted through analytical induction. Analytical induction begins with a problem or a question to be analyzed and the purpose of the research then is to approach the problem or the question through the use of a theory derived sensitizing concept. Analytical induction is a multicas e approach that involves gathering data from one group based on a theory created through sensitizing concepts, and analyzing and using that data to collect further data. Through this process, researchers refine and reformulate the theory that develops in the process of analysis (Willis, 2007).

Data was gathered in stages, where each collection of data was analyzed and the theory or questions developed from the initial analysis were compared with further data collection. The data collected in each instance was applied to each case and assisted in informing the constant comparative approach to this project. This form of analysis is recursive, meaning that steps taken in analysis were completed several times, and the categories and focus may changed throughout the analysis process, thus making the analysis and theory development emergent (Willis, 2007).

The majority of the analysis of data for this study occurred over a two-month period of time spanning the early part of November through to January 2010. This timeline fell within the original estimated time for analysis that was stated as being between one and two months. The audio-recorded data collected from the focus groups and the data recorded from the observation

sessions were transcribed at the completion of all focus group meetings and observation periods, although some initial analysis was conducted following each focus group and observation session. The data was transferred verbatim to a word processor file, from which data was analyzed. From the initial readings, a coding page was developed identifying core themes and sub themes based on participant comments which assisted in revealing further findings (Patton, 2002). I analyzed the core content of the focus groups and the observation sessions by “identifying, coding, categorizing, classifying, and labelling the primary patterns in the data” (Patton, 2002 p. 463).

I used open coding as a form of analysis in this study, as open coding proved an efficient way to break down and examine data by means of conceptualizing, comparing and categorizing data (Kvale & Brinkmann, 2009). Coding of data involved reading through the data seven separate times and identifying emergent core and sub themes. Coding was facilitated by reading through the transcripts via word processor and making notes in the margins of the text. Initially open coding was conducted by creating an open coding document identifying the initial categories, ideas, and meaningful statements as they relate to the research questions via a colour coding system. I then proceeded to conduct a full annotation of the data, developing a similar document to that used in initial open coding, but involved the use of much more in-depth theme and sub theme development. From the full annotations, I was then able to create a sorting page that broke down the data into their distinct core themes and sub themes, and organized the pertinent data chunks for this study under their distinct themes.

The codes for this study were developed through convergent classifying, where I looked for recurring regularities in the data. Once patterns were located, I identified how the categories were developed and held together in a meaningful way and I then identified the differences between categories to make sure these differences were clear (Patton, 2002). I coded all the data through multiple readings of the transcripts, until the point where all the information presented had been exhausted and when all of the categories had been saturated leading to redundancy

(Patton, 2002). In other words, I coded the data to the point where no new knowledge was available, and all themes were sufficiently supported.

Once coding was completed, I then looked to identify the substantive significance of the data. Patton (2002) identifies substantive significance as a way to present findings based on how coherent and consistent the evidence is supported in the findings, the extent to which findings deepen understanding of the studied phenomenon, the extent to which findings are consistent with previous knowledge on the topic, and the extent to which the findings are useful in contributing to the intended purpose of the study. Substantive significance helped to interpret and identify the meaning of the data; facilitating a synthesis of the data collected. By identifying the significance of the data I was able to identify themes and from these themes I was able to make recommendations based on newly developed knowledge (Patton).

### **Researcher's Role and Reflexivity**

The role of the researcher as a person of integrity was made clear at all times in order to produce significant knowledge based on moral and ethical research methods (Kvale & Brinkmann, 2009). In this study, I fulfilled the role of a researcher and an observer while I explored the perceptions of the bouldering community members toward the Niagara Glen Nature Reserve. In order to inform integrity, trustworthiness, and reflexivity in this study it was important to identify my perspective and bias on this subject, as I am an insider within this community and the potential for blind spots influencing the outcomes of this study were possible if I had not been transparent in my relationship to this group. I was interested in studying the perceptions and community vision of boulderers at the Niagara Glen, as I feel it is important to identify and evaluate the benefits generated through participation in this activity. I believe the activity of bouldering to be valuable to the social, physical, and psychological well being of the invested participants. As a long time bouldering participant, I believe that this activity in this location is exceptionally valuable. I believe that nature participation of any kind generates feelings of advocacy and enhances perspectives of environmental consciousness. I also believe,

however, that there are inherent sustainability issues around participation in the sport of bouldering and that these issues are threatening to restrict or eliminate bouldering in the Niagara Glen Nature Reserve and at other locations.

The goal in conducting this study was to explore the perceptions of climbers who boulder at the Glen, and to further explore what their perceptions are towards environmentally sustainable bouldering practices, and a sustained community. I also acknowledge the lack of unity in the bouldering community as compared to other locations, and explored how climbers might create a unified community vision promoting practice. I believe that there are issues that needed to be evaluated with how we as a community practice the activity of bouldering. I also believe that through exploring these issues and through attempting to create a vision for the community, boulderers can better represent themselves, and work closer with the Niagara Parks Commission to find a solution benefiting all recreation groups and the environment.

## **CHAPTER 4 - RESULTS**

### **Introduction**

The purpose of this chapter is to organize passages collected during five separate focus group interviews into distinct themes in order to effectively represent the thoughts and feelings of study participants toward environmentally sustainable bouldering practices in the Niagara Glen Nature Reserve.

The data was collected through five independent one-hour focus group interviews, and four separate observation periods at the Niagara Glen Nature Reserve. The focus group interviews were conducted from late July, 2009 through to November 1<sup>st</sup>, 2009, while the observations were conducted from July, 2009 through to October 13<sup>th</sup>, 2009. In all, twenty-six individuals, nineteen men and seven women participated in focus group interviews. The majority of these participants represented boulderers whom have spent some time at the Niagara Glen in the last year. However, as previously mentioned two participants who contributed to the first focus group had



yet to visit the Niagara Glen for the purpose of bouldering, but stated that they intended to visit in the near future. These participants acknowledged a keen interest in the outcome of this study, and thus their participation was approved. Thirty-one individuals, twenty-one men and ten women, were observed bouldering at the Niagara Glen.

This chapter is organized by identifying the core themes obtained from the focus group interviews followed by sub themes described in detail. The sub themes are discussed beginning with a significant data chunk, an introduction to the sub theme, an analysis of the data chunks, and finally a discussion comparing observational data with results from the focus group data. Demographic information relating to focus group participants including age, gender, years climbing, years climbing at the Niagara Glen, occupation and children is represented in Figure 4.1

**Figure 4.1**

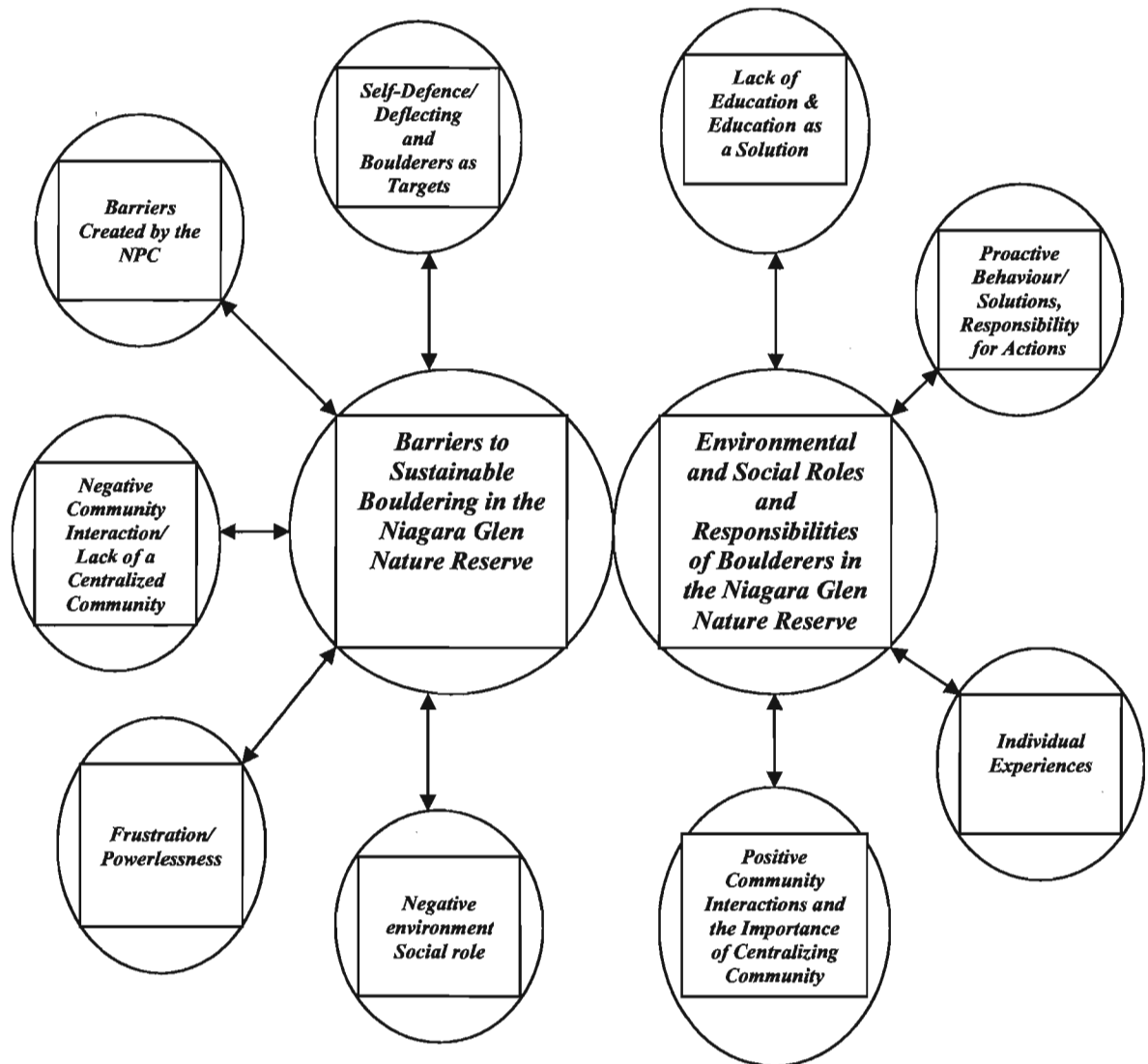
<b>Name</b>	<b>Gender</b>	<b>Occupation</b>	<b>Yrs Climbing</b>	<b>Yrs Climbing at Glen</b>	<b>Age</b>	<b>Children?</b>
Geoff	M	Climbing Gym Employee	12	10	28	N
Adam	M	Student	6	5	25	N
Tony	M	Student	18	18	24	N
Candice	F	Student	1	1	22	N
Simon	M	Engineer	10	10	29	N
Lucy	F	Teacher	12	12	36	N
John	M	Engineer	15	15	41	N
Jason	M	Grad Student	2	1	31	N
Lee	F	Grad Student	8	2	31	N
Calvin	M	Student	1	1	24	N
Curt	M	Crossfit Gym Owner	17	6	36	N
Brent	M	Engineer	10	9	30	N
Ted	M	Engineer	7	7	30	N
Sean	M	Climbing Gym Employee	10	2	24	N
Annie	F	Horse Trainer	5	4	26	N
Lori	F	Finance	12	12	27	N
Sai	M	Gear Shop Employee	10	1	25	N
Urri	M	Student	10	5	26	N
Randy	M	Gear Shop Employee	5	4	26	N
Julie	F	Climber	15	12	42	N
Scott	M	Steel Worker	15	12	46	N
Sam	M	Grad Student	1	1	29	N
Woody	M	Grad Student	1	1	28	N
Karina	F	Engineer	7	7	31	N
Joe	M	Student	1	N/A	27	N
Eric	M	Student	3	1	24	N

## Overview

The findings from this study are organized into two core themes with nine sub-themes. The first core theme is *Barriers to Environmental and Socially Sustainable Bouldering at the Niagara Glen Nature Reserve*, and encompasses five sub themes: 1) *Self Defence/Deflecting and Boulderers as Targets*, 2) *Barriers Created by the Niagara Parks Commission*, 3) *Negative Community Interaction/Lack of a Centralized Community*, 4) *Frustration/Powerlessness*, and 5) *Negative Environmental and Social Interactions at the Niagara Glen*. The second core theme is *Environmental and Social Roles and Responsibilities of Boulderers at the Niagara Glen Nature Reserve*, and encompasses four sub themes: 1) *Lack of Education & Education as a Solution*, 2) *Proactive Behaviour/Solutions, Responsibility for Actions*, 3) *Individual Experiences*, and 4) *Positive Community Interactions and the Importance of Centralizing the Community*. The core themes and sub themes are further displayed in figure 4.2. Figure 4.2 is organized with the two core themes presented in the middle, and the associated sub themes presented in two distinct semi-circles. The sub themes are linked to the associated core theme by a two-way arrow, signalling that each of these sub themes influence and are influenced by the outcome of the core category.

The findings from the unobtrusive participant observations are identified in figure 4.3, and represent the results from four observation periods in order to understand how bouldering is practiced at the Niagara Glen. Observation results relate to sixteen different observational components, which are identified in the table. Results from the unobtrusive observations are displayed with the emphasis placed on whether or not participants acted in an appropriate manner during their bouldering participation at the Niagara Glen.

**Figure 4.2** Connections between Sub Themes and Core Themes



**Figure 4.3**

<b>Categories for observations</b>	<b>Yes</b>	<b>No</b>	<b>N/A</b>
Tops out boulder problem with excessive vegetation	2	29	0
Leaves sanctioned trail to climb on boulders	20	11	0
Cleans up micro trash	10	0	21
Picks up litter left by other user groups	8	1	22
Removes vegetation on or around boulder/excessive cleaning of boulder or staging ground	1	30	0
Makes campfires	0	31	0
Uses excessive amounts of chalk/does not clean chalk or tick marks from handholds once climbing is finished	4	27	0
Travels in large group 3 and up	22	9	0
Travels in small group 2-3 individuals	9	22	0
Interacts appropriately with other user groups	25	0	6
Disposes of personal waste appropriately	28	0	3
Educates others on appropriate practice while at the Glen	6	6	19
Respects wildlife and vegetation	20	7	4
Is appropriately prepared and appears to plan ahead before visiting the Glen (has available methods to carry out trash/clean boulders after use	31	0	0
Manages personal safety and the safety of climbing partners in an appropriate manner (uses crashpads, has a first aid kit available, spotting etc.	31	0	0
Places crashpads on durable surface taking care to avoid foliage on staging ground.	24	7	0

Figure 4.2 represents how the themes and sub themes are connected as well as how they potentially shape the core themes illuminated in this study. Through the nature of the data collection process and the use of constant comparison, many diverse sub themes emerged from

the data and included significant amounts of personal narrative, which help to inform and illuminate important facets of this study. Figure 4.3 represents supporting findings that help to provides specific data on what actions were actually observed at the Glen. Findings from unobtrusive observations provide data that identifies how bouldering is practiced at the Niagara Glen and both supports and contrasts the statements made in focus group meetings. The following examples describe the perceptions of the research participants toward sustainable bouldering practices at the Niagara Glen Nature Reserve, and will begin to reveal some of the ways the bouldering community's views are constructed. Additionally, notes made through unobtrusive participant observations identify how bouldering is practiced at the Niagara Glen.

### **Core Theme # 1: Barriers to Environmental and Socially Sustainable Bouldering at the Niagara Glen Nature Reserve**

The initial core theme that emerged from data analysis was named 'barriers to environmental and socially sustainable bouldering at the Niagara Glen'. This theme is made up of a series of sub-themes that illuminate some of the specific problems that were hindering sustainable bouldering practice at the Niagara Glen, and created a way to understand why becoming a sustainable user group at the Niagara Glen is a challenge for the bouldering community. An initial introduction of each sub theme is provided in the following paragraphs followed by a thorough description of each in the form of participant narratives and observational data.

An issue that was initially apparent, as hindering environmentally sustainable bouldering practice at the Niagara Glen, was the feelings participants had of being targeted by the Niagara Parks Commission (NPC). Boulderers felt they were targeted as vagrants and they appeared to defend their actions at the Glen by referring to themselves as stewards, and as environmentalists. Additionally, the majority of bouldering participants in this study deflect blame for the major environmental degradation issues present at the Niagara Glen onto other user groups. Their

reasoning for this type of deflection was to identify their community as outside of the issues creating degradation at the Glen.

Another important issue that the data revealed as creating a barrier for environmentally sustainable bouldering practice at the Niagara Glen was the NPC's apparent interference in allowing bouldering participants to have a voice in management decisions at the Niagara Glen. Additionally participants described a lack of initiative on the part of the NPC to educate bouldering participants and others user groups on issues at the Niagara Glen. Bouldering participants also suggested that the NPC was not allowing the bouldering community to operate a variety of cleanup initiatives at the Glen, which had been proposed both formally and informally by a variety of members within the bouldering community.

Another significant sub theme identified through the data analysis process as a barrier to both environmental and socially sustainable bouldering practice at the Niagara Glen, was negative community interaction, which seemed to prevent a centralized bouldering community from forming. This theme helps to show how bouldering participants need to form a stronger and more centralized community that is informed and active in access issues at the Niagara Glen.

Feelings of frustration and powerlessness to affect change were also apparent as a sub-theme that created another barrier to environmental and socially sustainable bouldering at the Glen, as bouldering participants felt that they were powerless to affect any sort of positive change at the Niagara Glen and these feelings of powerlessness created frustration among the participants.

The final barrier that revealed itself through the data analysis process was the environmental impacts some study participants felt a number of bouldering participants were having on the flora and fauna at the Glen. Study participants identified negative environmental and social behaviours observed at times at the Niagara Glen and commented on these as creating barriers for environmentally sustainable bouldering practices at the Glen.

### **Sub Theme #1: Self-Defence/Deflecting and Boulderers as Targets**

My initial reaction with access was frustration, and anger because of having been a steward of the Glen for many years, knowing the Glen intimately ... I was extremely angry and frustrated when I heard that access was an issue (Julie, a 42 year old long time Niagara Glen Boulderer)

Frustration was commonly expressed by participants because of feeling targeted by the Niagara Parks Commission as an environmentally unsustainable user group. Participants commonly defend their role as active and environmentally conscious users of the Niagara Glen. Participants also demonstrated feelings of frustration and at times anger, as they believed the Niagara Parks Commission to view their interactions within the Glen as detrimental to the future environmental sustainability of fauna and flora; and were surprised that the Niagara Parks Commission would identify boulderers as a group that should be eliminated from further participation (affecting the ability for bouldering practices to be sustained at the Glen) as was stated in the NPC's Proposed Land Management Plan. The reactions to feeling targeted by the Niagara Parks Commission often led participants to defend their actions and deflect negative interactions occurring at the Niagara Glen onto other user groups. One participant, Karina a 30 year old boulderer stated in reaction to a discussion about climbing access at the Niagara Glen:

My initial reaction was disbelief, I could not believe that the climbers were identified as sort of the group that maybe wasn't so good for the Glen, after seeing so many hikers throw plastic bottles around and groups of teenagers coming down with beer bottles and putting up fires, I could not believe that it was us that was the group that was apparently the problem.

Many of the other study participants also felt similarly targeted and were quick to respond when asked about future access discussions at the Niagara Glen, that could potentially ban bouldering activities. John a 42-year-old boulderer stated:



I think it would be very unfair just to close it to bouldering and still let all the other user groups use it. As I said before, climbers are some of the biggest environmentalists I know and to just target them because they are an easily targeted group, you know you could just as easily say you know, no fishing down there and that would be just as unfair, you know fishermen are in general just as conscious about the outdoors. I think it's the general population that just go there once and don't know anything about it that are the biggest problem quite honestly.

It is seemingly apparent from this example that participants sometimes deflect blame to other user groups without acknowledging their own impacts to the site. This pattern of deflecting was consistent in each focus group interview, and was often the source of frustration and confusion within each of the discussions. Additionally, it was rare for boulderers to accept blame for anything related to environmental degradation.

Participants demonstrated feelings of confusion when evaluating their role at the Niagara Glen, and did not appear to understand why they would be described as a special interest group that needs to be eliminated in order for the Niagara Glen to become a more environmentally sustainable outdoor recreation resource. Jason, a 31 year old graduate student and new bouldering participant, stated in a moment of frustration and confusion:

It sometimes strikes me as a little odd that people focus so specifically upon climbers when I notice the other people that are walking along the Glen doing destructive things, so I sometimes wonder why climbers are being singled out!

This sentiment was further expressed by participants who feel that the relationship they as climbers have with the Niagara Glen, is one of stewardship and environmentally responsible behaviour. Participants in this study often expressed their role as one that is imperative to the survival of the Niagara Glen, and preferred to deflect any blame that was placed on them to other user groups, often making assertions like the one made by Brent, a 30 year old long time Niagara Glen local who states, "we are probably the best stewards they have and most aware". A similar

statement is also made by Lee a 31-year-old graduate student and boulderer who states, “I think for the most part we are protecting the land more than other people”. Both of these statements appear to be made in order to legitimize the role and right of boulderers to be at the Niagara Glen. Further, participants chose to defend their actions by discussing the positive influences that they have on the Niagara Glen, and why their continued presence at the Glen is important and more advantageous over the presence of other user groups. Urri, a 26-year-old boulderer states:

If you take away climbers from the Glen the garbage is going to remain. If you take away the tourists then it’s going to be much cleaner, it’s going to be much better. Well yeah we do our part we pick up every time one or two plastic bottles, random pieces of garbage, you know I always throw them in my pack, I’ve taken out like fucking 12 packs of bottles and stuff like that you know full on.

Some participants spoke negatively of other user groups and used derogative terms to express their frustration. One example representing this attitude is when Scott a 46-year-old long time Niagara Glen boulderer states:

It doesn’t matter how much hard work climbers do, it still depends on how they restrict the ‘tourons’, that’s what I’ve called them for years, moronic tourons, toursists, so will they stop tourists from having their freedom to do whatever they want? We’re not going to stop them unless things get out of hand.

This response was consistent in statements made by other participants when evaluating the relationship other user groups have with the Niagara Glen, compared with the more self proclaimed conscientious interactions of bouldering participants at the Glen. John supports this notion when discussing the interactions of other user groups at the Niagara Glen:

It’s not just the climbers you know, I go down there on any weekend and I watch the Geo-Cachers. You know they’ll just b-line straight to the cache and not even worry about what they’re trampling through. They won’t stay on the trails or you know they just kind of get “cache fever” and just head for it, ((Laughter)), not that I hate geo-cachers.

The responses by many study participants in defending bouldering at the Niagara Glen often reflect an ‘us versus them’ reaction, and seemed to identify an interaction that was very ‘climbing community focused’ rather than a focus that might look at the overall interaction of all user groups as a ‘Niagara Glen user group community’. Often this attitude appeared to be used in order to defend bouldering activities (as to sustain bouldering practices in the future) and single out other groups that have a perceived negative role at the Niagara Glen at least through the eyes of the bouldering community. However, participants did note that although frustrated with the actions of other users, their responses to other user groups were most often respectful. Brent provided an example of this type of an interaction and states:

I think they should be looking more toward your barbequers, your day groups of families and a lot of other groups that are up there. They come through in masses trampling wherever they feel like they want to go leaving garbage behind, and it tends to be climbers that pick that stuff up and educate them, and through all that we are still polite and stewardly toward them.

Many study participants not only reflected positively on their interactions with other groups, but went on to refer to themselves as stewards of the Niagara Glen, making statements such as, “yeah again I think for the most part, most climbers are good stewards of the environment” (Lee, Focus Group 2), and “I think that they (climbers) are a good steward” (Curt, Focus Group 2). Participants also went on to make claims, which reflected on their perceived environmentally conscious role at the Niagara Glen and made proclamations such as the one made by Ted a 30 year old boulderer who states, “the general group that I climb with will go the extra mile I guess, and will help to clean up the areas that have been tarnished by other people” and “I’ve never run into people who boulder who are actively trying to destroy the area they’re climbing in or destroy the area for climbers. It’s not something that happens”. Statements like these were common in how boulderers liked to see themselves represented, and reflected how study participants defended their community.

## Observations

Many diverse interactions observed at the Niagara Glen both supported the attitudes and opinions of study participants, and provided evidence that identified a different relationship between boulderers and the natural environment at the Niagara Glen that is not necessarily positive. In eight separate cases, boulderers were seen picking up litter left behind by other user groups. Additionally, ten boulderers were observed cleaning up their own micro trash and making sure the area around the boulders was clear of any man made debris. Boulderers on six occasions were also observed passing on helpful information to other users, including visiting boulderers and other recreation participants. Furthermore, bouldering participants also were observed largely respecting vegetation and wildlife at the Glen, and twenty nine out of thirty one boulderers were observed avoiding top outs on boulders with large amounts of vegetation present. Many bouldering participants also passed on important information regarding access issues and bouldering specific interactions that affected the environmental sustainability of the Niagara Glen. These positive interactions with the natural environment and with other users were fairly common, and were representative of how study participants viewed their relationship with the Niagara Glen. However, there were also some observed interactions that contradicted some of the statements made by participants, and signalled a different role of bouldering participants.

Although study participants were adamant about how environmentally conscious they were while bouldering at the Niagara Glen, many of their interactions could be viewed as negatively impacting flora and fauna found at the Glen, and seem to create an impact that is different from what boulderers generally like to disclose. At certain times, the impact upon the staging ground around specific bouldering areas was observed as being excessive, with groups of climbers exceeding what is likely an environmentally sustainable limit. Bouldering participants were at times also unconscious of how they placed their pads at the base of climbs, and would spread their personal belongings all over the bouldering site with little thought being given to the vegetation in the area or how they might be impacting other visitors' experiences. Additionally,

boulderers in rare cases were observed removing vegetation from around boulders and modifying landings (for the purpose of safety) by moving rock and deadfall. These behaviours, although not commonly observed (only seen occurring once), represented actions that were not conscious of the fauna and flora in the area, and identified conduct different from the environmentally conscious language presented during the focus groups.

It is interesting to note that during the observations at the Niagara Glen, there was never a time that bouldering participants tried to hide or defend any of these activities; rather, they were often just as adamant about their role as environmentalists in this setting as they were in the focus group setting. In most cases bouldering participants were highly respectful of the natural and social environment of the Niagara Glen with twenty-five out of thirty one individuals interacting appropriately with the natural environment and others while bouldering. There did however appear to be a lack of understanding among all participants as to what specifically constituted as environmentally sustainable versus unsustainable behaviour while participating in the activity of bouldering.

While comparing participant responses from each focus group, it became apparent that all participants felt the need to defend their actions and reinforce why they believe they are stewards of the Niagara Glen. Study participants responded with frustration and at times were very adamant that the problems that currently exist at the Glen were the result of other user groups, and had little to do with boulderers' interactions with the Glen.

Although many claims of environmental stewardship were made in the focus groups, it is interesting to note that the very nature of bouldering often has some impact on the natural environment and these impacts were rarely mentioned during the focus group interviews, instead boulderers were quick to place blame on others. However, there was also evidence that boulderers are aware and are actively trying to manage some issues creating degradation at the Glen (such as not topping out on certain boulders); and based on focus group discussions, boulderers appear to

be a group of participants that are willing to learn more about the issues affecting the Niagara Glen, including a greater emphasis on minimizing bouldering impacts.

### **Sub Theme #2: Barriers Created by the Niagara Parks Commission**

I think if there's some sort of initiative taken by the park, boulderers would definitely be there supporting it and we definitely would be respectful of any of the rules placed on us as long as they are reasonable and they have some kind of basis in research, not just rules made up on a whim. (Karina. Focus Group 5)

Discussion about perceived barriers created by the Niagara Parks Commission (NPC) emerged as a significant talking point among all study participants. Participants often discussed a willingness to be more proactive in maintaining and cleaning up the Niagara Glen, but expressed frustration with the Niagara Parks Commission for not allowing bouldering participants to be more involved. Additionally, participants shared frustration with the NPC for not adequately educating all user groups, and for not monitoring the park and enforcing rules and guidelines that could help manage some of the many issues presently taking place at the Glen. Participants also remarked on the confusion created by poor trail systems at the Niagara Glen, leading to the creation of social trails that create uncertainty for many users as to what trails qualify as sanctioned.

Participants often spoke of a willingness to work with the park to organize cleanup initiatives and promote other actions that could help minimize impacts at the Niagara Glen, but expressed frustration with not being permitted to have an active role at the park. John, discussed the potential role of climbers at the Niagara Glen and states:

Being pro-active, you know organizing clean up days, which we actually tried to do once and we ran into a lot of opposition didn't we? We tried to do one probably close to 10 years ago and we ran into trouble with the parks, they said they would arrest us if we came up with bags of garbage, because moving the trash from the bottom to the top

would have been considered littering, because they wouldn't give us a dumpster to put it in.

Further, Brent a 30 year old boulderer, identified the community of climbers as becoming more informed and more active through the Ontario Access Coalition (OAC), in helping to maintain different climbing areas throughout Ontario. However, Brent showed frustration with the Niagara Park Commission for not allowing similar initiatives to occur at the Niagara Glen:

The strength of the climbing community in terms of access is general pretty good, like the OAC has I think a fairly strong membership. I've been talking to some guys in the group and it's definitely growing and getting stronger, especially in the last couple of years, they hold events, cleanups, and stuff... it's too bad they always happen at rattlesnake. So I think it's quite significant there, but it's not being focused on, it's not spreading the efforts over the areas equally and I think that's also being inhibited by the Niagara Parks, because as far as I know they don't let you as a climbing group go in there and clean up. So I mean come on guys like that's two handed, or both sides of the hand or whatever is the coin. So given on one hand we're damaging their park but on the other hand their saying well don't come clean it up, it's whatever, liability or we have people who do that, we have union issues, we have to pay our guys to do that. I think if we were allowed to, our access committee would organize and get the support to come out and do those types of cleanups.

A similar response was also made by Scott, who felt that the NPC was impeding boulderers from having an active role at the Glen, which led him to state, "I bet if the OAC could actually do a clean up there you'd really notice a marked change in the amount of garbage down there".

The frustration felt by study participants who believe that they are not being given the power to have an active role within the Niagara Glen is also identified by participants who feel that the NPC themselves are not taking an active role in maintaining the Niagara Glen; nor did

study participants believe that the NPC was taking an active enough role in adequately educating and communicating what the needs of the park are to all user groups. Annie, a 26-year-old bouldering participant states:

I think climbers are willing to work with whatever authority, I don't know what they're called, but it just feels like there's no communication from their end, like there's no sign up there that says their considering closing it for climbing, there's no message I've ever seen, it's just rumours from everybody. So it's as if they don't even want to give boulderers a chance to help out and look after themselves, they've already made their decision and they don't give a shit.

Study participants were also interested in seeing educational initiatives put in place at the Niagara Glen that are already common in other recreation destinations. Participants discussed many of the issues occurring at the Niagara Glen as being a problem due in part a lack in educational resources and appropriate signage. Study participants recommended many different initiatives that the NPC could implement that would help to communicate with all user groups. One recommendation made by participants was to educate all user groups by providing information sessions on flora and fauna found at the Niagara Glen, and provide information regarding access restrictions. Brent believed that the park should take more initiative to educate its users and states:

I have another idea. How about when you go to the Glen, similar to snowboarding, when you want to get into the training park you have to sit down, not all places but some places, you sit down to a video before you get your pass. Why not install a gate, initiate a user fee and have an education video? We've talked about the access committee being responsible, but they're only responsible to a point, at some point someone who hasn't met anyone in the community is going to show up at the Glen and there's some responsibility for the park to provide that education.



Participants also discussed the need for more informative signage throughout the Niagara Glen that would assist in educating all user groups, and provide accurate and up to date information about access restrictions; as well as outlining specific behaviours at the Niagara Glen that are acceptable and unacceptable. Participants felt frustration with the lack of direct communication from the NPC, and felt that the expectations of the NPC were not made clear thus creating confusion for bouldering participants. Ted states:

It would actually be really nice if they (NPC) could do things like other destinations, like what Squamish has and just put up well defined boards identifying what you can and can't do, as apposed to having 12 point font with four thousand things you're not allowed to do. It would be nice if we had something like a blackboard there so you could actually inform people of things that are going on, just something nice that I've seen at other hiking destinations, it doesn't necessarily have to be a climbing destination.

Participants also felt that the NPC was not clearly marking and managing the trail system at the Niagara Glen, leading to confusion regarding what is, and what is not a sanctioned trail. Study participants appeared frustrated at being blamed for creating unsanctioned social trail systems, as they appeared to believe that by not clearly marking and maintaining the sanctioned trail system the NPC was actually creating social trails. Julie particularly felt that if the NPC was not taking the initiative to clearly mark their trails, then any social trail creation was clearly the fault of the NPC:

I mean the Niagara Parks really is responsible technically for the establishment of unsanctioned trails as well because the sanctioned trails were so poorly marked that unsanctioned trails were created because people did not know where to go. All the sanctioned trails there are hard to figure out and they just blend in with the unsanctioned trails, because the Niagara Parks has never done enough to be able to create highly visible established sanctioned trails.

Participants also appeared to feel that along with the lack of proper trail management, the NPC was not adequately enforcing rules that they claim to have put in place for acceptable behaviour at the Niagara Glen. Participants identified enforcement at the Niagara Glen as important for eliminating certain problems that occur frequently at the Glen, and appeared to direct frustration toward the NPC for not taking any significant action to change the behaviours of certain inappropriate user groups. Karina remarked in a moment of frustration:

I mean all this talking is not going to make for changes if action isn't taken. Basically you can put up the rules, but if there's no enforcement the rules will be broken. I think if even occasionally there was some enforcement of the rules the word would spread, and people would think twice before having fires. So basically we can talk all about it and the Niagara Parks Commission can look like their actually doing their job by having these talks, but if they're not willing to get off their asses and do something why should I? I will because I care, but they're not setting a good example.

### **Observations**

Boulderers, although apparently frustrated by what they see as a lack of initiative on the part of the NPC, to adequately educate all recreationists and manage the Niagara Glen, still appeared to take initiative themselves to make sure other user groups were appropriately utilizing the Glen. Boulderers appeared to follow many of the rules stated by the NPC and abstained from having fires at the Glen, were predominately careful in how much chalk they left on the rock surface (only four individuals were seen being excessive with chalk use and creating tick marks), and took responsibility for their personal safety and the safety of others. Boulderers were also seen primarily using the sanctioned trail system at the Niagara Glen when moving between different locations, however they were also observed leaving the sanctioned trail system as twenty different individuals were observed leaving the trails in pursuit of specific boulder problems, and in these cases using the most obvious social trail network.

When comparing the responses of study participants to the direct observations at the Niagara Glen, it appears as though bouldering participants are interacting with the Niagara Glen in a way that they perceive to be appropriate and in a way that they believe the NPC would approve of. It appears that bouldering participants, though frustrated by the apparent lack of initiative on the part of the NPC, are still willing to do their part to educate others and practice their chosen activity in a way that is perceived to be environmentally sustainable.

### **Sub Theme #3: Negative Community Interaction**

One of the things that seems to be pretty evident is that if it encroaches upon climbing time, a lot of times people, climbers, won't go and do it because they would rather be climbing than learning about the right things to do to keep climbing available. I think that getting rid of a little bit of that selfishness might be a good thing, you know as far as the climbing community (Julie. Focus Group 1)

In the previous sub theme, study participants spoke of their willingness to act in helping to maintain the Niagara Glen, but expressed frustration with the NPC for not permitting bouldering participants to have an active role in the park. Study participants also appeared to be frustrated with the NPC for not communicating their concerns with boulderers in an effective way that would encourage environmentally sustainable use; and were also concerned that the NPC was not effectively maintaining the Niagara Glen and educating user groups in a way that would yield positive visitor interaction.

Although a case can be made that the NPC should increase their efforts in how they interact with boulderers and provide more education and appropriate park management; a case can also be made that the bouldering community needs to become more active and empowered and make changes within the community that could strengthen their overall image and practice. Study participants though critical of the NPC, also appeared to be critical of their own community for not having an active enough role in contributing to access discussions. Curt states:

I find we're very tight knit as a bouldering group you know, most weekends it's the same group of people and you see it like there's the Rochester Crew, there's the Buffalo crew there's the Toronto Crew there's the whatever crew and everybody knows each other and everybody says hi, but we don't sit down and have discussions on what we should do as a community to improve Glen access, it wouldn't necessarily be a bad idea but everybody would probably just end up drinking too much.

A similar comment is made by Ted, who appears to believe that the community of boulderers that use the Niagara Glen needs to become more proactive in how they interact and manage access issues and stated:

Well I think, when you think about community you think about kind of each individual within that community. I'm just thinking that generally I find that climbers tend to be mostly laid back people so it would be interesting to see people actually take a more proactive approach to it. That's about all that I can think of, if you can somehow convince people that they need to actually take that step.

Both of these statements demonstrate a need for more action on the part of climbers who boulder at the Niagara Glen. These statements also describe interactions that appear to be more self serving, rather than benefiting the community as a whole. Julie appeared to be especially critical of some of the ways boulderers behave, and made reference to the overall attitude of some bouldering participants, shedding light on their lack of interaction and support for community initiatives. Julie stated:

I think that there are a lot of boulderers, and not just boulderers but climbers in general, that talk big but they don't act big. They will say yeah they don't like the access issues, they don't like all these things that are going on, but they do absolutely nothing ((frustration in her voice here)) to support wanting to make it any better. I think that the community could be a lot stronger. I think if people wanted to really have the things that

they enjoy they have to fight for them and a lot of people aren't, they become I don't know, I just say they're really Canadian.

This is one in a series of statements that appear to criticize parts of the bouldering community for not actually being supportive of access initiatives and for not actively being invested in the issues facing continued bouldering access at the Niagara Glen. Julie also notes that some bouldering participants are not only indifferent to the issues, but have an attitude that does little to support community. She states:

Climbing has its ego base and people being frustrated or pissed off with various things about access or whatever else and they say they're pissed off with that day, that they have a 'fuck you' kind of attitude and then they go and do what they want, whenever they want and not have a regard for all the other boulderers in there that are trying to do the right thing. Whether or not they're uneducated or they're just plain old disrespectful and egotistical I'm not sure.

This statement is not only critical of the perceived interactions of some bouldering participants, but also identifies bouldering participants that distance themselves from community and interact with other bouldering participants in a way that is potentially detrimental to community empowerment, environmentally sustainable bouldering practices and the ability for bouldering to be sustained at the Glen in future.

Another issue that was discussed by participants that appears to contribute to poor community interactions is the lack of centralized community initiatives being facilitated by local climbing coalitions and climbing gyms. Some participants appeared to believe that it is the role of the Ontario Access Coalition and local climbing gyms to centralize the bouldering community and pass on pertinent educational information. Lee states:

I think that the climbing gyms need to work harder at educating people about going outside, I think that's where it starts because you get groups of people who meet each

other at the gym, who just start going outside and they don't necessarily go with people who have been going for a long time, I think that's where the community breaks down.

Lee went on further to state,

Even just like working at the desk and somebody's like yeah did you go to the Glen this weekend? And you talk to them about it, ask them what they did there and how many pads they brought in order to think about safety and sustainability. I think it's part of the job of the people working at the gym to ask and to inquire, not necessarily to go with them but to make sure that they're learning and knowing what they're doing, that's where I think the community breaks down a bit.

Another participant criticized the potential role of climbing gyms in creating and maintaining community and promoting education, as he appeared to believe that the role of climbing gyms is to look out for their own investment, and that sustaining and building community was secondary to profit generation. Curt stated:

Gyms are in business to make money right? At the end of the day if I own a gym I really care about my receipt, you know. But like these guys (referring to a local climbing gym) aren't climbers you know, I don't know that they've ever been to the Glen or anywhere else locally. You look at Gravity (climbing gym), Ron hasn't been a climber in 15 years, I don't know if he even knows how to get to the Glen. So you know it's a great place to build a community, but I can't see them putting their time and their money into something that's not for their own benefit just because they are a private business, and at the end of the day if the Glen closes more people go to Gravity or more people come here so that means more money for them right?

Criticism directed toward climbing based institutions was not only directed at climbing gyms, but also toward the coalitions that claim to support access to climbing destinations in Ontario. One specific reference was directed toward the Ontario Access Coalition, an organization that works to maintain access to many climbing destinations in the Ontario region

including the Niagara Glen. Curt stated in frustration, “The Access Committee is fucking useless...but we’re working on it”. This response though not necessarily representative of the majority of participants identifies frustration with not only individual bouldering participants, but also the coalition whose role is to maintain climbing access, promote environmentally sustainable practices and support community.

The role of not only individual bouldering participants, but also the gym community and the OAC, appear to be important in creating positive and proactive bouldering community interactions, however it appears that current interactions are in need of more cohesion if the community is to become an active group of participants who use the Niagara Glen sustainably.

Another issue that was discussed as leading to negative community interactions at the Niagara Glen was the conflict that exists between the bouldering community, other user groups, and the NPC. Participants discussed how more solidarity between all groups is needed in order to create a thriving community. Karina in discussing this conflict stated, “I think as a Niagara Glen community we are not doing so well, there seems to be a lot of bickering between maybe us and the Niagara Parks Commission”. Additionally, Karina states, “we just need to form a greater Niagara Glen community, and then figure out what we need to do to make the Niagara Glen more sustainable for all user groups”.

A stronger more unified relationship based on sharing education and information between bouldering participants and the NPC was also identified as a way toward creating a sustainable Niagara Glen Community. Furthermore, decision-making based on unbiased and educated resolutions was identified as important in creating a relationship that could better enhance community interactions. Julie states:

The best thing that climbers can do is be educated themselves as to what is going on and be respectful of the rules, providing the rules are within reasonable guidelines, of the environment are unbiased and that they’re, you know they’re (boulderers) are not feeling targeted by the NPC. I think what creates a sense of community in itself is when the NPC

does not show bias against climbers, and when climbers don't show bias against the NPC.

I think that will build a sense of community and make climbers better stewards for the Glen, as they won't want to go in there (the Niagara Glen) with a sense of bitterness, they will want to go in there with a sense of wanting to make it better.

It appears that study participants want to have a relationship that is not only good for maintaining and supporting their own community experiences at the Niagara Glen, but are also concerned with having a relationship that benefits the entire Niagara Glen community, and a relationship that is based on mutual respect. Although participants appear to be critical of the role of the NPC, the responses provided during the focus group interviews identify a willingness on the part of bouldering participants, to create a more cohesive community that also includes the NPC and other user groups who spend time at the Niagara Glen. Furthermore, respondents appear to stress the need for more cohesion and responsibility within the climbing community, and appear to feel as though more should be done on an individual level to promote community interaction. Participants seem to feel that if boulderers could find solidarity within their own community, then they would be more informed and more open to working with the NPC and other Niagara Glen user groups.

### **Observations**

During observations at the Niagara Glen, it appeared as though the community of boulderers were fairly cohesive in their relationships with one another. At no time was there any apparent animosity toward community members, nor were there any discussions that criticized their role in the community.

However, the community of boulderers observed never appeared to critically analyze their actions in the Niagara Glen. Bouldering participants would generally boulder in small groups, but on one occasion the number of bouldering participants under one specific boulder reached over 20 participants, and never was there any discussion that disapproved of the potential impacts of this interaction. There were however many occasions when the issues regarding access



in the Niagara Glen were brought up in discussion, and on these occasions the only community that appeared to be targeted as detrimental to the overall environmental sustainability of the Niagara Glen, were the groups that visit the Niagara Glen with the sole purpose of partying and camping out at the Glen in the evenings. Boulderers were also critical of the NPC for their role in not maintaining the Niagara Glen appropriately and for not providing any rule enforcement on a regular basis.

#### **Sub Theme #4: Frustration and Powerlessness**

As far as community empowerment that's kind of hard, for most climbers, myself excluded from this one, they tend to be young ((laughter)), they tend to be students, they tend to have no money, I fit into that group still but not the other two, so when you're young and poor how do you hold any power? You don't! Everywhere you go, you go with your hat in your hand please can we climb here, and you know, so you have to be very nice and polite and respectful in order to have that happen, which is why we're all very nice and polite and respectful when we go to the Glen. (Curt)

Frustration has been identified in other sub themes as an important element potentially leading away from environmentally sustainable bouldering practices and potentially compromising the future of bouldering at the Niagara Glen. In this sub theme frustration is seen through the lens of powerlessness and the effect of having little power to affect change can have on bouldering participants. Empowerment as described by Perkins and Zimmerman (1995) is an ongoing process that is intentionally driven towards involving the local community and involving critical reflection, group participation, and caring. Empowerment is also described as a process where member participation is enhanced through organizational structures and thus goal achievement within the group can enhance quality of life (Perkins & Zimmerman).

Study participants remarked they felt as though they as a community, did not feel included in group participation and the organizational structure at the Glen. This led them to feel that they had little power to affect any sort of significant change. By not having significant

resources to utilize that could potentially work in their favour, and by feeling as though they were not included in decision making at the Niagara Glen, bouldering participants were left feeling that they had no way of changing their future at the Niagara Glen. Curt, describes a feeling of powerlessness when comparing the fate of Niagara Glen bouldering community with other user groups in other areas and states:

We clean it up and you know we try to do our best to leave no trace, and we try to do everything that we can because we want to continue to have access to it (Niagara Glen), but you know in order to have power you need something like the Access Fund in the states, where hundreds of thousands of climbers all donate and they have millions of dollars at their disposal, in order to protect access. Like Skaha bluffs in British Columbia, the farmer sold the land and all of the sudden we didn't have a way to get to the cliffs. Then, the access fund and the co-op (Mountain Equipment Co-op) both got together, bought a piece of land, built a parking lot, now there's permanent access to the place. You know examples from all over the states, all over Kentucky of climbers' coalitions donating money, buying land so that we can have access to the cliffs. But all the land that's good for climbing here is already conservation area, provincial, national park area, there's no way to have the power there unless we become the chairs of those conservation areas and those provincial and National Parks, so I'd say were never going to have that power.

Curt describes his frustration with the lack of power bouldering participants have in this province to affect significant change in access, and remarks that a great deal of the power affecting change in his examples, is coming from access to money and the difference between how land is managed in different areas. Curt's remarks on how he feels that boulderers are never going to have power is a significant statement, as it identifies deep frustration in not being included in community decision making, and shows how the lack of significant power to affect change weighs on the participants of this activity at this specific bouldering destination.

Frustration is also expressed in how participants appear to feel they have been treated over time when access issues have surfaced around bouldering practices at the Niagara Glen. Julie specifically relates the frustration she feels with being identified as a special interest group and expresses how this frustration eventually is detrimental to how the bouldering community reacts to access restrictions. Julie states:

I think it's kind of unfortunate that as climbers, because we've been shut down SO MANY TIMES with access and people have gotten SO FRUSTRATED ((frustration in voice)) with the systems that are out there that are not supporting it as a standard activity, that are considering it a special interest group, and because of all the liability and all these different things that have happened, that ultimately climbing gets shut down. Then the people want to basically disrespect or disobey the system because they are just FED UP with the fact that no matter what you do there, you know they're going to say no!

Her statement further shows the frustration participants feel in the decisions that are made at the Niagara Glen and identifies how at times the only way to feel as though bouldering participants can have power, is to work outside of the systems that have been put in place to control access. If access restrictions are put in place that limit the power bouldering participants feel they have in being part of the decision making process at the Niagara Glen, then they may begin to work outside the system that restricts their involvement at the Glen. This negative reaction to access restrictions may in turn lead to what former Niagara Glen head naturalist Ritchie (2002) calls abuse of the park.

There are those in the bouldering community however, that believe it is more important to be part of the solution than contribute to the problems the Niagara Glen is facing on a regular basis. The problem associated with this belief nevertheless, is that participants also feel as though their efforts are going to be wasted. This opinion is reinforced through a statement made by Scott, when discussing the role boulderers should play at the Niagara Glen. Scott states:

Be part of the solution not part of the problem. Try and then when you get fed up let somebody else do the hard work and you just enjoy the benefits, selfish maybe but maybe you'll put the effort in something more worthwhile, somewhere else that might profit numerous other climbers, maybe it's going to be another bouldering area or crag, but good luck with the Niagara Glen.

Scott further expresses this belief when he discusses what he has observed over the years while bouldering at the Niagara Glen. Scott identifies frustration and powerlessness at how he views past efforts climbers have taken in helping to maintain the Niagara Glen. Scott states:

In the ten years I've been there they haven't made a lot of progress that I can see. I can understand why people don't try ... within the community because it's self-evident once they get a bit of history and they see for themselves, because if they spend some time there, then they'll see that their efforts are going to be wasted.

Scott identifies frustration with the lack of power he and other bouldering participants have had in acquiring any significant leverage at the Niagara Glen, over many years of use. Scott appears to describe the efforts of bouldering participants as wasted at the Niagara Glen, due in part to being a group that has been disregarded in decision-making. Community development leading to environmentally sustainable use should be "supported by community members, or benefit the community and be grounded in experience that leads to best practice" (Frank & Smith, 1999). This appears to not be occurring at the Niagara Glen, as the bouldering community appears to not be included in decision-making, and thus has little power to inform best practice at the Glen.

#### **Sub Theme #5: Negative Environmental and Social Roles**

My reaction to full closure would be typically to ignore it. I think it's totally uncalled for and I personally will step it up and pay fines, fees, tickets whatever it takes... I'll be there.  
(Brent)

Although a smaller category, the theme of negative environmental and social roles associated with bouldering at the Niagara Glen is important to understand in order to fully

represent all bouldering practices; both practices viewed as creating positive experiences and benefiting the natural environment and behaviours that are potentially detrimental to environmental sustainability and compromise the future of bouldering practices at the Glen.

Attarian (1995) discusses a need for a renewed clean climbing ethic that “promotes stewardship and appreciation toward the vertical world and the surrounding environment” (p. 99). This role of stewardship at the Niagara Glen appears for the most part to be occurring; however participants also made statements that represent a potentially negative environmental and social role at the Glen, and it is important to understand this element of the bouldering experience for a variety of reasons.

Minimum impact practices such as leave no trace techniques have been discussed as ways in which to potentially create a clean climbing ethic, and although participants spoke of managing their impact on the natural environment and being environmental stewards, certain unsustainable practices were identified as occurring at the Niagara Glen. Ted identified certain practices that boulderers were participating in, that may have a negative impact on flora and fauna at the Glen, and may be considered unsustainable bouldering practices. Ted states, “In reference to the Niagara Glen, because it’s such a vegetated area I know a lot of boulderers who insist on topping out some of the boulders that do have vegetation on the top”. This statement is concerning, as in recent months the Ontario Access Coalition devised a set of guidelines to promote minimum impact bouldering activities at the Niagara Glen, and one of the most highly stressed guidelines states, “Boulderers will exercise a **“no topping-out”** policy on all boulders heavily vegetated at the top. There may be rare and endangered species located at the top” (Ontario Access Coalition, 2009).

Sean, a 24 year old climbing gym employee also discussed some of the negative impacts created by climbers at times in the Niagara Glen, and states, “a lot of people in there, they go out and they kind of don’t follow the main trails. They wander around looking for boulders, they climb with their street shoes on and wear down the rock.” This statement identifies another

environmental sustainability issue that may create potential for damage to fauna and flora at the Glen. This account also identifies a practice that goes against the interim guidelines created by the OAC; and is in contrast to the statement made in the guidelines that mentions, “Stick to the main trails leading to the boulders. If you don’t know where the boulder is ask other boulderers or check the online guide at [www.glenbouldering.com](http://www.glenbouldering.com). Do not scramble through vegetated areas in search of it” (Ontario Access Coalition, 2009).

Statements identifying potentially negative environmental and social roles were also made in reference to boulderers being eliminated from the Niagara Glen, which would affect the future sustainability of bouldering practices at the Glen, and identified how participants would react to bouldering restrictions. Ted identifying his reaction to being banned from the Niagara Glen states, “I wouldn’t like it at all to be completely honest. If they banned bouldering completely I wouldn’t adhere to that”. Statements similar to this were made on more than one occasion and show a negative reaction based on frustration at the potential ban placed on bouldering practices at the Glen. Lee in discussing the potential reaction to the prospective ban on bouldering states, “If they actually managed to ban bouldering at the Glen then I think people would probably just climb there more covertly. I think that it would still happen”. This response though reflecting negatively on the social role of bouldering participants appears to be a reaction to boulderers feeling inadequately represented and targeted.

Finally, negative interactions creating environmental and social conflict at the Niagara Glen were also identified as a result of the increasing popularity of bouldering in Ontario, specifically in climbing gym settings, and the lack of knowledge participants have regarding ethical bouldering practice. Lee states, “lots of people come to the gym and they’re like, ‘oh we gotta go outside’ and they don’t really have any sense of ethic for how to treat the boulders, they just treat it like a gym sometimes”. Also reflecting this concern is the increased status given to climbing, reflected through media outlets and gear manufacturers. Lee identifies this newfound

popularity of bouldering and rock climbing, as creating a problem in how bouldering participation is viewed by those new to the activity. Lee states:

I think sometimes climbing is becoming really cool, so I think like certain type of clothes you can wear, and gear and people are just getting really into it maybe that's part of the problem, because how many people do you hear talk about the Glen and they feel cool because they go to the Glen, and they know that they should call it "the Glen" you know.

In this statement, the Glen is identified as a status symbol that may be leading to increased popularity. This increase in popularity may be responsible for bringing new bouldering participants into the Glen, who are unfamiliar with the guidelines and ethical protocol that dictate environmentally sustainable bouldering practices at this location.

### **Observations**

Although some participants discussed negative impacts associated with bouldering practices, specifically the assumed disruptive practices associated with 'topping out' boulders that are highly vegetated, and leaving marked trails in search of boulders; on very few occasions were these practices actually recorded. At times, participants were observed 'topping out' on boulder problems, however most of these boulders were lacking any obvious vegetation, and participants appeared conscious of their interactions with vegetated areas on and around the boulders. In only two separate cases were boulderers seen 'topping out' boulders with some vegetation present, however in these cases there was no safe alternative and 'topping out' the boulder problem was done specifically to provide the safest option when completing the climb.

Boulderers were also at times observed leaving the sanctioned trails to seek out boulders throughout the Glen, but on these occasions participants were viewed using pre-existing social trails and were not seen creating new paths or disrupting vegetation in those areas. Participants appeared also to be conscious of following the path of least resistance, meaning that they chose to follow the most obvious route to their destination.

## **Summary**

This section explored barriers and the potential barriers to environmentally sustainable bouldering as well as the potential threat to the future of bouldering practices at the Niagara Glen Nature Reserve, and identified the concerns that bouldering participants have with their current interactions with the Glen and the interactions of other users. This section also describes some of the issues associated with bouldering and specifically showed how bouldering participants defend their recreation behaviours at the Glen. Boulderers also appeared to feel as though they were targeted by the Niagara Parks Commission (NPC) and thus spent a great deal of time deflecting blame for unsustainable actions at the Glen, onto other user groups. In this section, the direct frustration bouldering participants feel with the NPC was also identified as a barrier leading to sustainable bouldering practices at the Glen as was the lack of community interaction on the part of bouldering participants.

These findings also show that barriers can be created through the lack of power participants feel they have to be involved in significant changes at the Niagara Glen, and that by not being directly involved in discussions regarding access to the Glen, participants cannot have a voice in future decisions. Finally, this section identified the direct negative environmental and social roles that bouldering participants have at the Glen, and discussed some of the possibilities of what participants need to accomplish to overcome this barrier in order to sustain bouldering practices at this location.

In the next section, the specific environmental and social role and responsibility of bouldering participants to positively influence future bouldering participation at the Glen will be discussed. The next section will describe what participants identified as significant in promoting environmentally sustainable bouldering at the Niagara Glen.



## **Core Theme # 2: Environmental and Social Role and Responsibility of Bouldering**

### **Participants at the Niagara Glen**

The second core theme was the ‘Environmental and Social Role and Responsibility of Bouldering Participants at the Niagara Glen’. This theme is made up of a group of sub themes that identify some of the behaviours of boulderers that reflect positively on participant interactions with the Niagara Glen; and outlines the steps that members of the bouldering community suggest they are willing to take to become better stewards of the park environment.

One potentially positive finding that initially represents the likely willingness of bouldering participants to become better stewards at the Niagara Glen, is the readiness of study participants to become more educated on issues and practices that create environmental degradation at the Glen, and to pass this awareness on to others.

Another significant finding that represents the willingness of bouldering participants to become socially and environmentally responsible for their actions at the Niagara Glen is the proactive steps participants are taking and seem willing to take to create solutions that will help support sustainable bouldering initiatives at the Glen. This theme identifies how bouldering participants are proactive in their community and how they are taking on responsibility for their actions at the Glen.

The individual experiences of study participants and their interactions with the Niagara Glen is also an important theme to discuss, as it describes the personal connection participants have with the Niagara Glen, and how their experiences while bouldering have led to stronger bonds with others in their community.

The final theme identified as significant to the environmental and social role and responsibility of bouldering participants at the Niagara Glen, is the theme identifying the benefits associated with maintaining a positive and centralized community. Study participants spoke frequently of the role they have within the community and how centralizing the community is important in creating a more environmentally sustainable bouldering ethic.

### **Sub Theme #1: Education as a Solution**

I understand that access needs to be, you know they need to look at the way climbers are using the boulders and I understand not wanting to top out things that have fragile vegetation on them and that kind of stuff, but I think that can be accomplished through education instead of closure. I think it's just a matter of making sure climbers know... they'll respect the guidelines if they know about them. (Lucy)

Education and awareness were viewed by participants as vital in eliminating barriers to environmentally sustainable bouldering practice at the Niagara Glen. Participants spoke of becoming more aware in recent years on the issues facing the Niagara Glen, and discussed a need for education to be made a priority both within the bouldering community and between climbers and the Niagara Parks Commission (NPC).

Attarian (1995) discussed the importance of education in rock climbing practices in order to create a renewed climbing ethic, and discussed the need of role models being involved in education initiatives. Study participants mirrored this opinion by discussing the need for veteran bouldering participants to be active in education initiatives, and to pass on the 'bouldering ethic' to newer bouldering participants. Karina while discussing how bouldering participants can become more environmentally sustainable emphasised the importance of "educating newer climbers about bouldering outdoors and what the practices are and what's acceptable and what isn't". Further, Karina states, "as long as you explain to people what the reasons are for having to behave a certain way, they will take you seriously and they will respect the rules".

Participants also identify some specific steps that should be taken in providing education to newer climbers and the climbing community as a whole. Participants recommend more involvement from climbing coalitions in providing educational resources and setting ethical standards for environmentally sustainable bouldering practice at the Niagara Glen. Brent stated:

I think for the most part most climbers are good stewards of the environment. You know definitely some of the younger kids starting out could use a little bit more education

before they just go charging on out there. Impart the knowledge because really that's what and access committee should do, they should be making it so that they've educated the climbers enough that we don't have access issues wherever we go. There should be really no impact when we go places and it's only through education that you're going to get that, not to say that that's going to solve all the access problems, but it's a big step.

Participants also recommend specific steps that community members themselves should take to become more educated and aware of their behaviour while at the Glen. Annie identifies the importance of "really thinking about where we're going when we're down there, what our image is, whether we're picking up stuff and just doing our best to portray the best image, because we know how fragile it is right now". Comments reflecting the importance of how bouldering participants portray themselves and the need to become better informed were mentioned, as participants appeared to recognize how their actions at the Glen may look to others. Therefore, participants identified a need to better represent themselves while at the Niagara Glen. Lori, a 27-year-old bouldering participant states:

Climbers are always friendly, but it's how people perceive us...that's the problem. It's not us I don't think that is really the problem, you're going to have bad apples in every group, but the perception of bouldering and climbing I think in Ontario is skewed and it's not what it should be. I think that's where we have to think about ok, how do we change the minds of the people that walk by the people that organize and manage the conservation areas that are allowing us to either climb or not climb?

This statement identifies the importance of bouldering participants becoming educated and fully aware of their impact and how others may perceive them. Participants appear to feel as though they are misunderstood, and that a need exists to educate and have open transparent communication with other groups and the NPC, as to what bouldering activities actually entail. To further support this notion, Lori states:

I think there's a lack of understanding though, I mean you have two sides of it, you see ok there's a bunch of people with these massive things on their backs and they're coming in and some are obnoxious and here's what I see, I don't understand climbing but this is what I see....they're grabbing onto the rock and I think it might be, whatever so ((Laughter)) but if there was more education on both sides of 'hey why are you so concerned about us, ok here's the reason here's why you shouldn't be, here's why we don't do that, we don't climb on you know vegetated areas or whatever. I think everybody needs to be more understanding of the other side, where other people are coming from because yeah it will help the situation.

Awareness was also identified as important in creating a socially and environmentally sustainable bouldering community. Participants mentioned becoming more aware of access issues through active participation in the community and this is reflected through another statement made by Lori:

I think I've been way more aware in the last couple years than ever, of showing up and doing stuff. I can't say the same of me a few years ago, I don't think I was aware of the issues, now we've had lots more closures and a lot more, I guess, talk about oh shoot this is going to be closed or that's going to be closed, so people are more aware; climbers are more aware and I think that you're going to see that they are more willing to say hey we only have so much rock, it's not going to grow in the next year or two, so I don't want to stay in a gym and have to climb there, I want to be able to go outside when it's there.

Awareness through community interaction is also mentioned by Sai, who discusses the relationship between years climbing in the community and increased attentiveness to ethical practice in the outdoors. Sai states:

I think that's the way it goes in the climbing community is the more you climb, the more people you meet and the more you end up getting involved you know, even without being conscious of it. It's not like when people are just starting out they have bad habits and

then they just keep those habits throughout their entire climbing career, the more you climb the more you get to know the people that have been doing it awhile and the more you learn the ethics of it.

Sai describes experiences at the Niagara Glen, as ways to further educate bouldering participants. By experiencing bouldering with other more experienced members of the community, the behaviours and ethics associated with bouldering practice may be passed down. By passing on pertinent information through community interaction the potential for creating experiences based on social engagement may help to sustain bouldering practices at the Glen for future use while also encouraging more environmentally sustainable bouldering experiences.

Awareness and education are identified as ways in which the community can become more informed as to issues creating access problems at the Niagara Glen. Participants described the relationship between years of experience bouldering at the Glen and increased ethical practice. Participants also spoke of the role of the access coalitions in further promoting ethical bouldering practices, through providing educational resources and direct community involvement.

Participants also discussed the role of veteran boulderers and spoke of the responsibility these community members have (or should have) in passing on pertinent information that might allow more novice bouldering participants to become aware of their impacts at the Glen. The role of veteran boulderers in educating new members of the community was also identified as important in making participants aware of access issues affecting the future of bouldering participation at the Niagara Glen.

### **Observations**

It was interesting to observe some of the behaviours of bouldering participants at the Niagara Glen while interacting with other bouldering participants and other user groups. Participants while discussing the need for education initiatives and greater awareness tended to deflect the majority of the issues to newer bouldering participants. Many statements were made

that identified more time spent at the Glen with a greater informed environmental ethic, and for the most part these statements appeared to be accurate.

Many of the bouldering participants that were observed represented long time veteran participants and among this group, discussions concerning access were heard on six separate occasions. Additionally, these members of the community were observed having discussions with other groups, and were seen in these interactions as being mostly friendly and courteous. Bouldering participants also passed on information regarding environmental sustainability issues, and expressed the importance in adhering to guidelines put in place to protect both the natural environment and the future of bouldering practices at the Glen. Most commonly discussed practices are the need to stay on the seven sanctioned trails and basic leave no trace information. Veteran bouldering participants were also observed having conversations with what appeared to be novice bouldering participants and passing on information regarding specific boulder problems, as well as making these participants aware of access issues at the Glen.

Many of the novice bouldering participants observed appeared to act in a way that identified willingness to treat the Niagara Glen with respect, but at times they were seen participating in actions that could be considered unsustainable. Some of these actions included using unsanctioned trails in search of boulders and not being adequately prepared for all bouldering activities. Many of these behaviours did not appear to be done maliciously, but were viewed more as a lack of education and awareness on their part.

## **Sub Theme # 2: Proactive Behaviour and Responsibility for Actions Leading to Sustainable Bouldering**

I think the best way to stay empowered is to be pro-active about it too, and you know find out what we can do. (John, Focus Group 1)

Focus group participants frequently spoke of their actions at the Niagara Glen and specific bouldering activities as being primarily environmentally sustainable. Although some data described seemingly unsustainable actions taking place at the Glen on the part of bouldering.

participants, it seemed clear that these actions were primarily unintentional and that participants were focused on wanting to do their part to become more proactive about environmental sustainability. Participants spent a great deal of time in the focus groups brainstorming potential ways to become better Niagara Glen users, and these statements led to a largely evident theme; one that identifies the proactive steps members in this community are willing to take so that their actions may lead to further responsible and environmentally conscious bouldering practices.

Focus group participants were very specific when identifying steps that could be taken, to facilitate better stewardship on their part at the Niagara Glen. Many of the comments were based on minimizing the direct impact that bouldering has on the environment through tangible and seemingly evident steps. Tony, a 24-year-old boulderer and student identifies some of the basic steps bouldering participants should take in minimizing their impact and states:

One of the things climbers need to do is watch their micro trash. You go down there and you see a lot of empty beer cans and stuff and for the most part I'm assuming that its not coming from climbers, but you go to the bottom of the climbs and there will be little piles of chalk from somebody's spilled chalk pot or there will be piles of tape and tic marks which are really annoying. So you know climbers need to watch their impact, they might not realize how bad it looks when their throwing tape on the ground and that it's almost as bad as beer bottles.

Tony's statement identifies a simple problem that can compound already existing issues with garbage at the Niagara Glen, and places some of the blame on the bouldering community. Tony's recommendations are however, concrete solutions that may lead to more environmentally sustainable bouldering practices at the Glen while simultaneously helping to improve the overall image of the bouldering community.

Participants also spoke of being proactive in communicating more within the community. Participants spoke of critiquing their own actions as well as the actions of other bouldering participants at the Niagara Glen, in order to be proactive in creating environmentally sustainable

bouldering practices. John believes that bouldering participants should be “policing themselves as a community and should not be afraid to say ‘hey it’s not cool to top that out because of the vegetation’ and telling people why”. Curt also describes the importance of community members speaking up and being proactive in communicating their concerns with others and believes that bouldering participants should,

Make sure that if people are doing stuff that they’re not supposed to be doing we make them aware of that, like you know when there’s vegetation on top of that boulder so don’t top it out, the problem ends at the lip, and you know just try to keep our impacts to a minimum.

Communicating the needs of the community appears to be a primary way for boulderers to become more proactive and to create more environmentally sustainable bouldering participation at the Niagara Glen. Focus group participants also stated that being proactive sometimes requires the group to become more aware of the impact that their mere existence at the Niagara Glen is having on the sustainability of flora and fauna and the experiences of other user groups.

Participants also identified the potential need of bouldering participants to evaluate the effects of their group’s size and the environmental and social impacts they are having around specific boulders. Some participants also discussed the need to better manage their image at the Glen and how others perceive their actions. Annie mentioned that “boulderers need to try extra hard to put out a good image”. Lori further expresses a similar opinion and states:

One that pops into my head right away is smaller groups, the large group of climbers that set out does not help lift the overall image that we send to onlookers that don’t really know what we’re doing when all of our crap is sprawled out; not on purpose just you have lots of friends, and now there’s 15 people at the same area and our impact is going to be greater. You just can’t help it, instead of staying in our centralized area now we’ve had to sprawl out cause we just have more stuff so maybe trying to focus on “hey we’ve



got a group of fifteen lets split up in three's" just because we have to evaluate how we look to the ongoing traffic that maybe doesn't understand what we're doing as much. We also need to be very careful about how we portray ourselves; my suggestion would just be keep it small and discreet.

One of the ways participants discussed keeping their impact discreet and managing their image at the Niagara Glen, was to be proactive in trying to work together as a community. Participants appeared to believe that it is important to be conscious of the flora and fauna at the Niagara Glen, and to become more willing to work with the NPC on initiatives that will help maintain the Glen and promote environmental protection and social sustainability.

Focus group participants acknowledged their willingness to be part of the solution for supporting the Niagara Glen, and identified specific steps they would be willing to take for the betterment of sustaining the Glen. One of the methods that participants discussed was paying for access in order to provide revenue for maintaining the park. Jason states:

I think honestly keep it open but I also do think that you should probably, I don't know, people might not agree, but you should probably have a fee for access. I think a five dollar fee is a good idea because I think people would really feel like they were, climbers would feel that they were doing their part to sustain and keep up the park.

Some participants believed that they would be contributing to maintenance initiatives at the Niagara Glen by paying or donating money to the NPC, in exchange for access to the Niagara Glen. Jason particularly appeared to believe that by contributing money to the NPC and said, "it would give the climbing community more leverage" and as Curt states, charging user groups a fee may help to "weed out some of the people who just don't care" and may eliminate some of the user groups that use the Niagara Glen for environmentally detrimental activities.

Focus group participants also mentioned their willingness to be involved in initiatives that would help maintain the cleanliness of the park and made reference to being available for

cleanup initiatives if the NPC was willing to work with them to accomplish this goal. Randy a 26-year-old bouldering participant states:

I mean obviously climbers would want to help in some way and we are willing to do cleanup days and stuff like that. So even if we can work out something with them (NPC) like maybe we raise money or something, like a car wash.

Participants also mentioned that they are ready to do whatever it takes to create a positive relationship with the NPC, and work to protect the Niagara Glen. Julie specifically mentioned that bouldering participants should be,

Exercising control. You know I think that if it is evident that there are truly areas of sensitivity and there are signs that can prove that it is, then most people will understand that. If there were areas that truly contained specific things that require closures then people would respect that.

Julie's remarks identify willingness on the part of bouldering participants, to actively reflect on their interactions at the Niagara Glen and when the need arises, support the NPC by respecting guidelines that are put in place to promote environmental and social sustainability and protection of sensitive flora and fauna. Julie also in response to a question asking her to identify her vision for the Niagara Glen, defended the role of boulderers at the Glen and believed that participants should work toward being able to "pretty much keep what we already have established and show that it is a highly sustainable, environmentally respectful sport". However, Julie also notes that it is important to work with the NPC, and aspire to create "one of the most successful relationships between a government entity and a sport".

### **Observations**

Study participants were adamant during the focus groups that they should be taking proactive steps in managing their impacts at the Niagara Glen, including picking up micro trash left behind by climbers and other user groups, maintaining the areas around the boulders and communicating positively with other user groups. Participants mentioned the proactive steps they

already take in their interactions at the Glen, and mentioned their willingness to work with the NPC to create initiatives that promote both environmental and social sustainability.

While observing boulderers at the Glen, it was noted that at times participants were indeed communicating with other user groups in a polite and helpful manner. Bouldering participants were also seen cleaning up fire pits and bottles left behind by other user groups, and often showed frustration at the degradation caused by others. Micro trash did appear to be somewhat of a concern, however in most instances participants were observed picking up after themselves and never appeared to purposefully litter.

As noted earlier at times bouldering participants travelled in large groups and this behaviour could be perceived as creating a negative impact on the staging grounds around the boulders and the trails leading up to them. This interaction among large groups of boulderers could also negatively influence how other user groups perceive the bouldering community, and may potentially reflect poorly on bouldering activities at the Glen.

### **Sub Theme #3: Individual Experiences**

I don't know if I would say I think or I feel first, when someone says the Niagara Glen. I just get kind of a happy feeling, then I think of the Danzig boulder, I think of the water, I think of so many days of laughter there. I think of peacefulness and joy and all the times that I felt like this is what life is all about, when I've been there, but a lot of it is originally when someone says the Niagara Glen I just, I feel happiness. (Julie)

A small yet significant theme that emerged from the data was the individual experiences that participants often felt the need to share, which identified their personal perspectives toward the bouldering experience at the Niagara Glen. Participants identified their experiences at the Glen as important in allowing them to enjoy nature, and as a way to interact socially with other bouldering participants. Participants identified bouldering at the Niagara Glen in many different ways, but commonly discussed what makes their experiences significant to them. Karina when describing how the Glen makes her feel states:

I'm going to have to say beautiful and happy, because it's a really beautiful place and you're really happy being there. It also really comes down to the fact that you're surrounded by not only wonderful nature, but also really great people, and so you can't help but enjoy yourself looking around and spending time with the people you're with.

Other participants portrayed similar experiences at the Niagara Glen that appeared to influence their attachment to this place, and created positive memories on which to reflect. Sam, a 29-year-old graduate student, while discussing his experiences stated:

It makes me kind of think of the sense of wonder that I had the first time we went there. It was my first outdoor climbing experience and there was just this sea of boulders everywhere, too many to explore. We didn't really know any of the names or any of the climbs but it was just so fun to wander around the boulders. So that is kind of, that's what I think of every time that I hear the 'Niagara Glen', just wandering around the boulders and having a great time.

Other experiences participants have at the Glen relate directly with looking forward to bouldering at specific times of the year. Annie identifies the importance of being at the Glen in the "spring and fall because those are the seasons that we get out, it's definitely something I look forward to most of the summer and winter when we can't get out there". Randy further states:

I think of also getting out on the shoulder seasons and in the winter, and being able to go outside and do any climbing. It's kind of one of the only place that you can, the cold crisp winter days you can go climbing in February on a good day.

Experiences with specific boulders and 'projecting' specific boulder problems, also appears to be important in how participants experience the Niagara Glen. Lori states, "I think of my unfinished projects that keep me up at night", while Brent described an almost obsessive desire to continuously be at the Niagara Glen, and identifies his experiences at the Glen as contributing to "hours, days, weeks of my life gone projecting little limestone boulders". Brent

further states, “I also think about really unique ecology and geology and how it’s a fantastic place to hang out. It’s been a huge part of the last ten years of my life, so it’s an important place”.

Bouldering and rock climbing practices have been identified by Williams (1996) as a vehicle that contributes to experiences in the outdoors and enhanced enjoyment of wilderness areas. This was clearly the case for many of the focus group participants, as the experiences they describe provide a way to understand how bouldering participation at the Niagara Glen, contributes to the well being of participants; and how their experiences and memories of bouldering at the Glen enhance their connections to their community.

#### **Sub Theme #4: Positive Community Interactions/Importance of Centralizing Community**

I think it needs to be community-based, people teaching new climbers how to take care of the area, how to be stewards of the land.

Although mentorship toward stewardship has already been discussed, it is further expanded upon here because of the way it helped to describe environmental and social roles of boulderers. The importance of centralizing the community to become empowered toward environmentally sustainable bouldering at the Niagara Glen was identified as one of the most significant factors in creating sustainable bouldering practices. Community empowerment is identified by Perkins and Zimmerman (1995) as an ongoing process that is intentionally driven toward involving the local community, and involving critical reflection, group participation and caring. Focus group participants identified a significant lack of community initiative and empowerment, stemming from a lack in group participation and reflection on pertinent issues at the Niagara Glen as was discussed in the previous section. However, participants also described a willingness to become more empowered within their community and contribute to creating a positive and centralized community.

Many participants identified the community as strong in some respects, but identified a need for more universal effort in managing their impacts at the Niagara Glen. Lucy a participant from the first focus group, believed that community can be strengthened through adversity and

states, “I think in a way if people realize the seriousness of the threat, this could actually be good for the climbing community because it will bring people together”. Community can also be strengthened by removing barriers that separate different groups of boulderers. John states:

I think there’s a really dedicated core but I don’t think the community can be separated into the Buffalo community and the Hamilton community and the Toronto community. I think we need to consider it the ‘Glen’ community. I think there’s a really solid core of people that are the Glen community, that are really dedicated.

Participants appeared to believe that there should not be a separation among bouldering groups rather; Niagara Glen boulderers should identify themselves as part of the Niagara Glen community in order to develop the same objectives for managing their interactions at the Glen. Woody identifies the importance of bringing the community together and states, “I think we need to try to get everyone on the same page. That is probably a really big issue in terms of empowering the climbing community”. Julie also believes that having bouldering participants support the local access coalition is important in creating an empowered Niagara Glen community and states:

Community empowerment is built, I think through having more people support the Ontario Access Coalition in the pursuit of making things better for the Niagara Glen and in cooperation with the Niagara Parks Commission. We should also take other boulderers out and educate them on places within the Glen. We should make sure that the focus is not based on being selfish and everybody being fixed on their sends for the day, but rather focus at times on sharing the day with all of the people around them. Make sure that people get to see how beautiful the Glen is, and at the same time learn about what they should and shouldn’t do, or what they should or shouldn’t be on, you know toping out boulders that kind of thing. I think the spread of that kind of word builds a sense of community.

Julie identifies the importance of sharing the Glen with others and creating community through education and support for the OAC. By sharing the Glen with new bouldering participants and by working with the OAC and the NPC; information regarding environmental and social sustainability issues may be passed on through the community in a more efficient way, empowering the community to make changes that support further access to the Glen. Lori shares this sentiment and goes on to say,

If we add an element of preservation and sustainability into our community I think it will fit right in with all the other points on our 'to do' list in terms of friendship, and getting better, honing your skills or whatever, I think it would all go hand in hand it's just you have to add one more thing to the list in order to create community empowerment.

Participants also discussed the positive relationships that those in the community had with others while bouldering at the Glen, and how through remaining polite and friendly community is formed and maintained. Sam states, "I've only been three times but all of the people that I've seen there spend a minute and say hi, and they're all super friendly". Friendship leading to the formation of community was also identified as being shaped through the interactions participants had at the Glen, while participating in a shared interest. Annie while discussing how community is formed states:

I think it begins with friendship and even if I think about the, you know some of the closest friends I have are in the climbing community. Everybody has the same type of goals, perhaps the project is a little different but we are all looking to climb, to get better, to hone our skills, and to send a project that's been staring us in the face for seasons and that creates a real sense of community.

Community may also be created through participants becoming involved in tangible steps toward more environmental and socially conscious bouldering participation. Participants from the focus groups spoke of specific steps that they and others could take in order to create a stronger community, and more sustainable presences at the Niagara Glen. Julie states:

I think just educating each other, I think being willing to spread the word more, putting in a little more time. I think that's something that a lot of climbers could do and is something that climbers are not presently doing very well. Climbers should be putting a little more time into educating the community overall. I think supporting the area, supporting the Niagara Parks Commission and trying to make it a sustainable sport, proving that it's sustainable. I think that possibly climbers could do more with the community that are non-climbers. However, the best thing that climbers can do is be educated themselves as to what is going on and be respectful of the rules, providing the rules are within reasonable guidelines of the environment and that they're (boulderers), you know they're not feeling targeted, I think that that creates a sense of community.

Participants identified the importance of the bouldering community becoming responsible for their actions at the Niagara Glen, and mentioned the importance of all community members being on the same page when it comes to understanding the Niagara Glen. Participants also identified the importance of having experienced climbers educate newer and less experienced climbers on the ethics pertaining to bouldering practices at the Glen. Further, focus group participants also identified the importance of having involvement from all parts of the climbing community. Woody further expresses these ideas and states:

I think trying to get everyone on the same page is probably a really big issue in terms of empowering the climbing community. We really need to get people on the same page and get everyone, you know, knowing what to do, especially people like us that are new. I mean the gym is probably the best spot to kind of spear head this and kind of start the education process. From there I would almost say the onus maybe is on more experienced climbers to keep an eye out on what other people are doing, and be like "hey you shouldn't be doing that, this is why the shits kind of going down". I mean I don't see why in the future the Glen won't be open for lots of people and there will be sustainable bouldering. We should advocate this.



## **Observations**

Focus groups participants spoke of the need for community involvement in creating environmentally sustainable and socially conscious bouldering participation at the Niagara Glen. Participants spoke of many different ways community can be formed, and identified how they believe the community is presently interacting with the Glen. Participants for the most part spoke of a community that is friendly and willing to be involved in becoming more empowered and more capable of sustainably practicing bouldering at the Glen. Focus group participants appeared to understand the problems that currently exist in their community but were hopeful about their future, and were optimistic about their place at the Glen.

When observing bouldering participants at the Niagara Glen, it was clear that participants felt that they were part of a greater bouldering community. Bouldering participants were by and large friendly with one another and were open to passing on information to others regarding the Glen and the boulder problems that could be found in the location. Bouldering participants were also conscious of their impact and passed on information to others regarding current access concerns, and what others should do to minimize their impact.

What was not apparent, was what role each participant played within their community, and the overall impact they as participants have on changing bouldering practices at the Glen. Bouldering participants appeared to say all the right things, and appeared to interact in a fairly sustainable fashion at the Glen, but it would be interesting to understand their individual roles, and whether or not they support some of the potential changes that may restrict some bouldering practices in future.

## **Summary**

In the first part of the findings, the experiences leading to unsustainable bouldering practices were discussed. In this section, the focus was on describing what participants identified as significant in promoting sustainable bouldering practice at the Glen. This section discussed the perceived responsibility bouldering participants have to become educated on the issues facing the

Niagara Glen, and the importance of educating others in order to support sustainable bouldering practices at the Niagara Glen.

This section also discussed the proactive steps bouldering participants described they would take to help promote environmental sustainability at the Niagara Glen. Participants addressed their willingness to assist the park in initiatives that might promote better use at the Glen, and discussed the need for bouldering participants to exercise control and appropriately manage their own behaviours while at the Niagara Glen.

The positive experiences focus group participants have had at the Niagara Glen were also discussed in order to understand the importance of the Niagara Glen to individual bouldering participants. In discussing the experiences participants have had at the Glen, the sentimental value of this place is made clear, and there is potential for understanding what the loss of access to the Niagara Glen may mean to some of these participants.

Additionally, the interactions of the bouldering community were discussed in order to understand what steps are being taken in order to promote socially sustainable bouldering practices. The importance of the community becoming responsible for their actions at the Glen was discussed, as was the importance of how community is constructed. Participants appeared to believe that the future of bouldering access at the Glen lies in the actions of the community and cannot be effectively managed by only a few active individuals. Participants also stated that they feel good about the future of the Niagara Glen, and that they are willing to work to become more proactive sustainable bouldering participants.

## **CHAPTER 5 - SUMMARY, DISCUSSION OF FINDINGS, CONCLUSIONS, IMPLICATIONS**

The purpose of this study is to describe perceptions of boulderers toward environmental and socially sustainable participation at the Niagara Glen, in order to help inform future environmental policies as well as to understand the rock climbing community's vision for future bouldering practices at the Niagara Glen. This chapter will summarize the focus and results of this study, will outline outcomes and conclusions, will discuss implications of the findings, and will make suggestions for further research using a three-part *Place, Empowerment and Sustainable Use* framework to summarize important connections to related research literature.

### **Summary**

This study involved collecting data through focus group interviews which, promoted engagement in personal and group narrative. Additionally, data were collected through the analysis of historical data and the collection of participant observations (Willis, 2007). This study involved the use of action research, which allowed participants to focus on specific problems at the Niagara Glen, and by studying their own interactions, identify solutions that may lead to a more environmentally sustainable bouldering practice and sustainable community interaction at the Niagara Glen.

Through the analysis of data collected from five independent focus groups involving twenty-six participants, and four separate observation periods, which described the actions of thirty-one individuals, two main themes were identified. The first main theme identified through analyzing the perspectives of study participants was *Barriers to Environmental and Socially Sustainable Bouldering at the Niagara Glen Nature Reserve*. The second main theme was *Environmental and Social Roles and Responsibilities of Boulderers at the Niagara Glen Nature Reserve*. These findings help to portray the perceptions bouldering participants have toward the Niagara Glen as a place for recreation, and describes some of the perceived barriers that deter from environmentally sustainable bouldering practice and a socially sustainable community.

Additionally, these findings illuminate the level of willingness participants have toward becoming more proactive in their community.

### Discussion of Findings

The research questions guiding this study were: (1) How do boulderers perceive the Niagara Glen?, (2) How can boulderers at the Niagara Glen promote community in order to overcome barriers to a shared community vision?, (3) What are the perceptions of boulderers toward a sustainable bouldering community at the Niagara Glen?, and (4) How do participants practice bouldering at the Niagara Glen? The sample of bouldering participants taken from across southern Ontario and parts of New York state, identified through their responses, two main themes that helped to acknowledge and answer these research questions. The first theme, *Barriers to Environmental and Socially Sustainable Bouldering at the Niagara Glen Nature Reserve* was comprised of five sub themes: (1) *Self Defence/Deflecting and Boulderers as Targets*, (2) *Barriers Created by the Niagara Parks Commission*, (3) *Negative Community Interaction/Lack of a Centralized Community*, (4) *Frustration/Powerlessness*, and (5) *Negative Environmental and Social Interactions at the Niagara Glen*. The second major theme was *Environmental and Social Roles and Responsibilities of Boulderers at the Niagara Glen Nature Reserve*, which comprised four sub themes: (1) *Lack of Education & Education as a Solution*, (2) *Proactive behaviour/solutions, responsibility for actions*, (3) *Individual Experiences*, and (4) *Positive Community interactions and the Importance of Centralizing the Community*. Below is a discussion on how the results of this study address each of the research questions.

#### *Research Question 1: How do boulderers perceive the Niagara Glen?*

Participants tended to perceive the Niagara Glen in a variety of different ways. Some of the ways boulderers viewed the Niagara Glen appeared to lead to barriers toward environmentally sustainable bouldering practices and social sustainability. At times, participants described feeling targeted by the NPC and thus had negative attitudes toward how others viewed their interactions with the Glen, causing them to defend their role at the Glen. Additionally, participants described

the Niagara Glen as a place that creates frustration for their community, as participants consistently discussed having very little social power to affect change at the Glen (Speer & Hughey (1995). Thus their views toward the future of bouldering at the Glen were often threaded together with pessimistic undertones.

Additionally, participants perceived the Niagara Glen as a place where they through bouldering experiences have had positive individual and community experiences, leading to stronger environmental and social roles and greater feelings of responsibility. This echos what Baker (2005) describes as landfullness, where through active participation in the outdoors, significant relationships are formed with the land leading to more environmental awareness.

Participants identified the role the Niagara Glen has had in creating joyous memories through past experiences, and discussed the bonds that have been created within their community in large part due to bouldering experiences (Stokowski, 2002; Smaldone et al. 2005). This statement is mirrored by Thompson et al (2008). In their study, participants who had spent many years at the Niagara Glen described the importance of meaningful interactions with others at the Glen, leading to place attachment and greater feelings of responsibility for the location

Participants appeared to perceive the Niagara Glen as a place where education and information might be passed on from one participant to another in order to promote environmentally responsible behaviours. The attitudes of participants toward more informed user practices was important in understanding how education could potentially be used to help solidify a future where bouldering can be practiced sustainably under a cohesive and collaborative set of best and environmentally sustainable practices.

*Research Question 2:* How can boulderers at the Niagara Glen promote community in order to overcome barriers to a shared community vision?

In analyzing how boulderers promote community in order to overcome barriers to a shared community vision at the Niagara Glen, responses were varied regarding how participants assess their community's vision. Participants expressed both optimistic and very pessimistic

views showing a lack of a cohesive understanding and support for initiatives that may better sustain a favourable vision and position for the bouldering community in future.

Participants, while reflecting on their community's vision through an optimistic lens, emphasized what Frank and Smith (1999) described as steps toward community empowerment, involving among other things, building support within a community and maintaining momentum. The importance of centralizing their community is identified by the participants as being achieved through supporting the Ontario Access Coalition, and some of the coalition's ethics and actions toward climbing being carried out through minimum impact practices. Participants discussed the need for veteran community members to pass on pertinent information to newer bouldering participants. This information was identified by participants as being a set of the ethical guidelines about how to behave (and how not to behave) at the Niagara Glen while bouldering, and the vision the community has for future interactions at the Glen. Some of the guidelines identified by participants mirror guidelines put in place by the Southeastern Climbers' Coalition (2008) to decrease the impact boulderers are having in the southeastern United States. These guidelines included managing micro trash and other forms of litter, managing group size, interacting with other users in an friendly manner and representing the climbing community in an intentionally positive way, managing safety appropriately, cleaning up chalk, and brushing tick (chalk) marks from boulders and sensibly toping out boulder 'problems', meaning only when the boulder is absent of vegetation, or when safety is dependent upon toping out and down climbing or jumping off the boulder cannot be done safely.

Additionally, participants responded pessimistically to how their community's vision is created and maintained within the Niagara Glen bouldering community. Participants spoke of a lack of education and communication leading to negative community actions at the Glen and spoke very unenthusiastically about the lack of a centralized community, and the unwillingness of some community members to take an active step in becoming part of a new and sustainable vision for Niagara Glen bouldering. Some of the responses identified selfishness on the part of some

bouldering participants, members who were more interested in bouldering practices than being involved in community functions allowing for continued bouldering access at the Glen. Additionally, some participants identified a lack of sensible conduct on the part of some participants, identifying the impact of large unmanageable groups of climbers, and the unwillingness of participants to split up into smaller more manageable groups. Some participants also discussed the lack of education some bouldering participants had toward appropriate bouldering practices, and also discussed the lack of initiative on the part of some members to actively support the Ontario Access Coalition.

These responses identify an opposition to what community empowerment and vision should be, as community development creating empowerment should be initiated and supported by community members in order for changes to occur that benefit the community (Frank & Smith, 1999). In order for the Niagara Glen bouldering community to become empowered (and sustain future bouldering opportunities at the Glen), action needs to be initiated on the part of these participants toward significant change in current practices.

*Research Question 3:* What are the perceptions of boulderers toward an environmentally sustainable bouldering community at the Niagara Glen?

Participants seemed inclined to believe that their actions while at the Niagara Glen were primarily environmentally sustainable, contrary to findings accumulated by Attarian (1995), that associate rock climbing practices with damage to vegetation, the development of social trails, wildlife disruption and soil erosion. Because participants believed their actions to be environmentally sound their attitudes toward environmentally sustainable bouldering at the Glen seemed to invoke a great deal of self defence. Many participants believed that any unfavourable actions taking place at the Niagara Glen were due to the conduct of other user groups and were not representative of bouldering participants. Additionally, participants believed that in order for the Glen to see more sustainable action on the part of all users, the NPC would have to become

more involved in providing education to its users, and would also have to post and enforce rules at the Glen.

Participants deflected much of the blame for unsustainable actions at the Glen onto the NPC, as the common belief among most participants was that the NPC was not adequately managing environmental degradation caused by all user groups at the Glen, and were creating barriers that dissuaded environmentally conscious actions on the part of bouldering participants from occurring. Attarian (1991) defends this statement by and highlighted the importance of park management becoming involved in educating climbers on appropriate practices, instead of creating restrictions that decrease the availability for quality recreation experiences and create conflict between park management and climbing participants.

Participants from all focus groups emphasized their willingness to become proactive in working toward more environmentally sustainable bouldering practices, and believed that education and greater community empowerment were crucial in making their presence at the Niagara Glen one that is more focused on long term cooperation with the NPC promoting environmental and social sustainability. Some participants believed that in order for bouldering at the Niagara Glen to become more sustainable, they as participants needed to take responsibility for their actions. This sense of ‘needing’ to take action was a major finding in this study, yet whether or not the community actually takes action is to be determined. In the spirit of action research, the focus group interviews in and of themselves represent an initial step of action. Finally, participants recognized the importance of promoting a community wide ethic that not only focuses on their needs as climbers, but also the needs of the greater Niagara Glen recreationist community.

*Research Question 4: How do participants practice bouldering at the Niagara Glen?*

At times participants practiced bouldering at the Glen in a way that was predominantly responsible and fundamentally community focused. It also appeared that time spent at the Niagara Glen had lead to greater advocacy and pro-environmental behaviour on the part of bouldering



participants (Halpenny, 2005). Participants interacted at the Niagara Glen in a way that illustrated apparent respect, and in most cases it was clear that the Glen played an important role in the lives of the participants. Positive community interactions and proactive behaviour was observed during observation periods as bouldering participants were seen passing on information regarding bouldering at the Glen to other participants, and actively attempted to cleanup after themselves and others. Additionally, boulderers were observed discussing access related issues occurring at the Glen, and their behaviours at times were representative of a group trying to minimize their impact and represent themselves in a positive light. Participants practiced bouldering in a way that they appeared to believe created little impact to the boulders and surrounding fauna and flora. Participants appeared to be conscious of their impacts and chose in most cases to climb predominantly pre-established routes with very little if any apparent vegetation present. When discussing potential environmental sustainability issues associated with bouldering practices at the Niagara Glen, participants appeared to believe that their interactions were sustainable, and that any issues associated with the bouldering community were due in part to a lack of education on the part of newer bouldering participants. Participants also believed that they could further minimize their impacts if there was some support from the NPC in organizing clean-up initiatives at the Glen, and educating bouldering participants about issues leading to degradation at the Glen.

Participants spoke highly of their interactions while practicing the activity of bouldering at the Glen, but not all bouldering practices were observed as promoting environmental and social sustainability. At times, some of the actions observed on the part of boulderers led to both negative environmental and social interactions. Participants were observed using social trails to gain access to boulders off the sanctioned trail system. Boulderers were also occasionally observed climbing in large groups, creating what is likely an unsustainable impact on staging grounds around boulders. A large group of bouldering participants was also identified as a potential way to create a negative impact on how others perceive the community of boulderers. Participants on occasion also created noticeable impacts around boulders at the Glen by leaving

micro trash at the site of the boulder. In most cases, micro trash was made up of loose spilled chalk and in some cases small pieces of climbing tape. Additionally, some participants left noticeable ‘tick marks’ created with chalk on boulders and made no attempt to clean the tick marks after they were finished climbing. Although these actions were not common in most cases during observations, the impact of this conduct did not help to enforce what participants believe to be sustainable bouldering practice.

### Conclusions

The findings from this study consisted of two main themes that identify how bouldering participants view their actions at the Niagara Glen. Each of these categories describes distinct characteristics that speak to the future of environmental and socially sustainable bouldering practices at the Niagara Glen, and identify some components leading to a common community vision for bouldering at the Glen. Sustainable development and practice is described by Saarinen (2006) as “a process that meets the needs of present generations without endangering the ability of future ones to meet their own needs” (p. 1123). The interactions of bouldering participants at the Niagara Glen are complex and lead to conclusions that identify the community of boulderers as both conscious of supporting environmental and socially sustainable actions promoting a future at the Glen that is ecologically viable; and hypocritical in some of their actual practices that may not lead toward sustainable bouldering and interactions with the Glen, but rather deter from environmentally conscious behaviour and community empowerment altogether.

Results from this study demonstrate that *Barriers to Environmental and Socially Sustainable Bouldering at the Niagara Glen Nature Reserve* are influenced by some of the same impacts identified by Attarian (2003), which included overuse of climbing destinations by participants, leading to concerns about the impacts participants are having on the environment, encompassing damage to vegetation, potential damage to soil, and the growing presence of litter. Additionally, some of the impacts observed at the Niagara Glen coincide with the issues identified by the Access Fund (2004, 2006), which comprise impacts to vegetation, issues

affecting soil and vegetation disruption around the boulders as a result of frequent amounts of use, concerns about the development of social trails, and the impact to staging grounds as a result of crashpad placement.

Bouldering at the Niagara Glen is currently viewed by the NPC as an activity that may have an unsustainable future at this location. Reasons leading to this conclusion are refuted by the bouldering community, as boulderers see themselves for being blamed for the unsustainable deeds of others. However, issues comprising of bouldering practices occurring off the sanctioned trail system, and the practice of topping out boulder problems at the climb's completion may impart degradation that could be potentially managed with appropriate action on the part of boulderers, and properly established guidelines coming from both the bouldering community and the Niagara Parks Commission.

During the focus groups, participants provided information that identified their use at the Niagara Glen as predominantly low impact, and as an experience that has great value to each participant. These responses and the many observations made at the Niagara Glen led to the second main theme, *Environmental and Social Roles and Responsibilities of Boulderers at the Niagara Glen Nature Reserve*. Although the actions of bouldering participants were at times identified as negatively impacting the future sustainability of the Glen, and their role as a recreational user group in this location, the responses from focus group participants offered a different and more optimistic narrative. The answers to focus group questions identified a group of individuals who are willing to work toward creating more informed ethical guidelines managing bouldering practices. Additionally, participants discussed a willingness to modify their actions and be guided by the decisions of the NPC, as long as the decisions made are devised with equitable input from the bouldering community. Strategies toward managing the impact of bouldering and rock climbing participants is not a new step, nor is the generally positive response of the climbing community toward wanting to become better stewards while interacting with natural spaces like the Glen. Attarian (1991), identifies the importance of educating climbers, in

place of creating restrictions. This view was mirrored by many focus group participants who believed that with more education, greater steps toward environmentally sustainable bouldering practices would occur at the Niagara Glen. Participants believed that with these proactive steps the future of bouldering at this location would be sustained.

Bouldering and climbing participants taking action on behalf of their communities to promote more sustainable action is also not a new phenomenon, as organizations like the Southeaster Climbers Coalition (2008) have had great success in uniting bouldering participants and management bodies, and have promoted more ethical behaviours through ‘crag education flyers’. Responses in the data for this study identified a willingness on the part of participants to assist in any way that would make bouldering practices more environmentally sustainable at the Glen. However, the data also identified frustration with the NPC for not adequately managing the Niagara Glen, and not passing on education that could provide boulderers with the knowledge to change their behaviour. Participant data was unified in stating the support boulderers are willing to provide to managing the Niagara Glen, however data was also unified in believing that the NPC needs to step up and provide guidance to their users.

The results of this study have therefore led to four clear conclusions that identify current themes affecting bouldering sustainability at the Niagara Glen.

- 1) Boulderers at the Niagara Glen are impacting the natural environment. By being present at the Glen, and by participating in outdoor recreation activities, impacts that negatively affect the natural environment appear to be somewhat unavoidable as observed by all recreationists at the Niagara Glen including boulderers. The goal of the bouldering community should be to become more proactive in minimizing their impacts through establishing guidelines that outline minimum impact bouldering practices specific to the Niagara Glen environment as previously discussed in the findings.

- 2) Participants in this study are in disagreement as to what constitutes a future vision for the Niagara Glen bouldering community. Responses during the focus groups identified non-unified understanding on the part of participants as to what elements and actions lead to the creation of a more active, sustainable and informed recreationist community.
- 3) There is a lack of communication between the Niagara Parks Commission (NPC) and boulderers as well as between boulderers and the NPC. During the focus group interviews, participants expressed frustration with the NPC for not making their expectations known regarding access and environmental issues related to bouldering. There is a lack of cohesive understanding as to what steps boulderers should take in managing their impacts at the Glen and this is at least in part due to a deficiency in communication between both groups.
- 4) Niagara Glen boulderers want further guidance, leadership, and involvement from the Ontario Access Coalition and from veteran climbers in the area to promote sustainable bouldering practices at the Niagara Glen.

### **Implications**

A useful framework that helps to communicate the significance of these findings within relevant research literature as well as make recommendations for the bouldering community's future is based on a conceptual intersection of sense of place, community empowerment, and sustainable recreational use, which in part followed Stedman and Amden's (2006) theory of sense of place and community interaction. This model suggests that sense of place, community empowerment, and sustainable recreational use potentially overlap and interact with one another in both positive and negative ways through relationships between the physical setting, interactions and behaviours rooted in the setting, meanings and evaluations and local ecology, local society, and community action (Stedman & Amden, 2006). In the following paragraphs, arrangements of themes related to place, community, and sustainability are presented as they

relate to the findings and help to frame recommendations that emerged from this research project.

### **Place**

Participants reported having a particular relationship with the Niagara Glen that appears to be unique to bouldering. Participants expressed the importance of the Niagara Glen to their individual outdoor experiences, and revealed how their ongoing bouldering experiences at the Niagara Glen have led to place bonding. This revelation appears similar to statements of place bonding identified by Brooks, et al (2006), which explored the relationships participants have with particular locations and revealed “places and ongoing leisure pursuits... as relationship partners”. Smaldone, et al. (2005) also identified an emotional bond as being created through interactions with a location over periods of time, and the relationship boulderers have with the Niagara Glen was shown to resemble this sentiment. The attachment and bonding expressed by participants also identified bouldering as a way to attain positive psychological benefits and as potentially a form of spiritual nurturing (Johnson, 2002) as many of the participants portrayed the Glen as a necessary aspect that provides wholeness to their lives.

The individual experiences bouldering participants appeared to have at the Niagara Glen illustrated intimate knowledge of not only specific areas at the Glen, but also specific boulders and ‘boulder problems’. This reported knowledge resembles what Thompson et, al. (2008), revealed as specific rock memories, and explores an intimate relationship participants have with the Niagara Glen. This relationship is based on the acknowledgment of climbing as a potential conduit toward feelings of self-actualization (Williams, 1996) discovered through the recreational pursuit of bouldering.

Participants reflected on many occasions about the importance of their experiences at the Niagara Glen. Participants discussed how the potential banning of bouldering practices at this location would negatively affect their overall sense of wellness and place attachment at the Glen, leading to the elimination of meaningful individual experiences. Moreover, the loss of

experiences through the potential banning of bouldering activities at the Glen, identified in the participants' frustration at not only the potential loss of a significant place of meaning, but also identified the impact banning bouldering participants from the Niagara Glen may have on future environmental advocacy helping to sustain the Glen (Baker, 2005). Participants adamantly expressed their willingness to do whatever it takes to support the Niagara Glen, as the importance of this location to boulderers was expressed as pivotal to their overall well being and the future well-being of the Niagara Glen. This strong notion of 'place' could potentially be used to strengthen and unify the bouldering community's voice if they could focus their energy on their love of the place as opposed to some of the negative and pessimistic themes that were present in the findings.

### **Community Empowerment**

Consistently in the focus group discussions there appeared to be a need for a more unified and empowered Niagara Glen bouldering community. Community empowerment is described by Perkins and Zimmerman (1995) as a way toward exploring an intentionally driven process that involves a local community, whom are committed to acting and participating as a group and reflecting critically upon issues affecting their community. Perkins (1995) goes on to state that community empowerment should "encourage individual and community control over the planning and implementation of solutions to individually and locally-felt problems" (p.767). Furthermore, boulderers should attempt to become socially sustainable and unified as a community of practice, acknowledging the need to engage in mutual steps toward becoming active in promoting environmental sustainability

Many comments made during the focus group meetings, revealed different conflicting views on the strength and weakness of advocacy of the Niagara Glen bouldering community toward becoming empowered and engaged to support change. Four initial conflicting themes were revealed in the data. The first two themes presented apparent negative community interactions and the lack of a centralized community promoting empowerment and social

engagement at the Niagara Glen. The latter two themes presented differing results illustrating positive community interactions of bouldering participants and the importance of centralizing the community to promote empowerment and social practice that leads to greater environmental and social sustainability at the Niagara Glen.

The majority of participants, who represented long time Niagara Glen boulderers, consistently criticized the role of most bouldering participants in the community, and recognized the lack of initiative, social engagement and willingness of many participants to actively become involved in access related initiatives and grassroots events that support clean climbing (Attarian, 1995). Participants described the role of many bouldering participants as selfish, and stated that if initiatives that promote both environmental and socially sustainable bouldering practices interfere with bouldering participation, involvement on the part of the community will be negligible. This attitude is important to note as it echoes the statement made by Speer and Hughey (1995) that suggests, “Individuals cannot exercise social power except through organizations of which they are a part” (p. 735). If participants are not actively invested in their community and are not willing to support a community of practice, then it appears as though their power to affect change at the Niagara Glen is inconsequential. This barrier could be overcome, if ways of becoming actively invested in the Niagara Glen bouldering community were made clear through the leadership of the more experienced climbers and through initiatives led by the Ontario Access Coalition.

It is important to note that this attitude of non-involvement is contrary to the actions taking place on the part of other bouldering communities in the United States, where communities of bouldering participants are empowering themselves by working with land managers to promote environmental sustainability and sustained bouldering practices (Access Fund 2004, 2006; Southeastern Climbers Coalition 2008; Love 2008). It appears that conduct leading toward community interactions and a stronger centralized community needs to become grounded in positive action and practice on the part of the Niagara Glen bouldering community in order to



promote a sense of power that could lead to change both environmentally and as a socially responsible and sustained community (Speer & Hughey, 1995).

Participants also identified the lack of a centralized community as diminishing the power the community has to change their actions, and identified the inadequate role of the OAC and climbing gyms in Southern Ontario in providing guidance and education to bouldering participants. These statements were made in contrast to knowledge of other areas in Canada, and specifically when relating the role of the OAC to groups in the United States such as the Southeastern Climbers Coalition (2008), whom provide leadership and through distinct guidelines and educational literature, create a centralized and empowered community. This role is important to note as empowerment created through practice relies heavily on the ability for community members (and their representative coalitions) to build and exchange knowledge and use accumulated expertise to manage sustainability concerns as has been seen in other mentioned areas (Wenger & Snyder, 2000).

Participants did however also acknowledge the strength of the Niagara Glen bouldering community, reporting steps that some boulderers take or are willing to take to support the Glen and promote community involvement and practice. Participants often remarked that boulderers are willing to be involved in initiatives that would support environmentally sustainability practices at the Glen, including cleanup initiatives and following minimum impact guidelines. Furthermore, participants also acknowledged some willingness to support social sustainability by participating in further group discussions similar to the ones orchestrated in this study with the aim of exchanging knowledge, create community and understanding the range of views that shape the bouldering community. These types of responses seem to show a willingness on the part of the climbing community to actively become self-empowered to affect change, promote practices positively affecting social and environmental sustainability, and identify a vision that if successful, supports what Attarian and Keith (2001) view as the furtherance of climbing activities, while protecting natural resources.

Participants also reported on the role of the Ontario Access Coalition in working toward securing bouldering access at the Glen, and mentioned that one of the greatest benefits associated with this type of action would be the accumulation of power and knowledge to affect positive changes at the Glen. Although critical of the OAC, participants appeared to still believe that in time the OAC would become a successful access coalition, promoting a centralized and educated community. Participants identified other cases where through the cooperation of management agencies and access coalitions like the Access Fund in the U.S., access to climbing areas like Skaha Bluffs in British Columbia has been effectively restored. Additionally, relationships between management agencies and climbing organizations have been successful in promoting education strengthening bouldering communities and allowing members to become better stewards of the land in areas like Joshua Tree National Park in the U.S. (The National Park Service U.S. Department of the Interior 2000).

The role of access coalitions has been identified as critical in promoting guidance for climbing and bouldering participants in the past, as “membership in an organization connects individuals to a setting with potential to access social power” (Speer & Hughey, 1995). The Access Fund (2004, 2006), has provided ways for climbers and management agencies to work together for more environmentally sustainable practices, and has provided guidance, education, and funding for many different climbing and bouldering based access initiatives, thus allowing for greater social sustainability. Participants stated that in the past, the OAC was predominantly ineffective and did not represent the initiative and perseverance of coalitions like the Access fund, or the Southeastern Climbers Coalition. Participants did however note that they are now beginning to see more effort on the part of the coalition, toward promoting action (through access guidelines), that will help encourage environmentally sustainable bouldering practices, a centralized, educated community, and more secure access to locations like the Niagara Glen. Action on the part of the OAC and membership is an example of how member participation and improved goal achievement can better encourage collective action (Perkins & Zimmerman,

1995). This appears to be the current direction the OAC is heading with support from their membership

Participants also appeared to understand that by encouraging the OAC through active membership, they were having a direct impact on future decisions and indirectly the state of a sustainable bouldering community, which all likely affects future access at the Niagara Glen. Participants also appeared to identify their own shortcomings, as some made note of their lack of participation in past OAC initiatives and their deflecting of blame onto other groups without thoroughly evaluating their own practices. However, participants also stated that they are becoming more aware and understand that their role is crucial in creating a proactive community that could be repositioned as a viable and sustainable community from the perspective of land managers.

Another issue deserving further attention is the lack of communication between the NPC and the bouldering community, which appears to have led to a lack of power to affect significant change on the part of bouldering participants. Speer and Hughey (1995) reflect on empowerment and power as a way to manifest social power on the level of the community, organization or the individuals, and believe that a group of organized participants can lead to social power. Additionally, social power can be attained further through initiatives that are created and managed through a community of practice. Community of practice assists members in attaining power through transferring knowledge and best practices to other members. Through this process the community has the ability to solve problems quickly and gain control over pressing concerns (Wenger & Snyder, 2000). Many comments were made that identify frustration with the NPC for not communicating and passing on knowledge identifying the needs of the park to bouldering participants, and for not allowing the bouldering community to become organized in initiatives that may help with sustainability at the Glen.

By not communicating their intentions, the NPC was identified as creating a barrier that restricts the ability for the bouldering community to gain power that could lead to positive social

change and a sustained community. Boulderers felt targeted by the NPC and felt as though their voice was not represented in management decisions affecting their potential and sustained role at the Niagara Glen. Therefore, the ability of the bouldering community to hold power and change their behaviours becomes greatly limited. The limitation of the bouldering community to hold power at the Glen due to being excluded from management decisions is not representative of community development and empowerment (Frank & Smith, 1999). These limitations led some participants to identify the need for a greater and more active Niagara Glen community, and a need for more discussions and knowledge exchange between boulderers and the NPC, in order to develop specific and reasonable strategies for environmental sustainability that address the concerns and positions of both groups.

Participants also identified a lack of management on the part of the NPC, and felt that the NPC should be educating all users on issues they deem important at the Glen. The importance of management agencies like the NPC, providing educational resources on acceptable use in place of restrictions, has been identified as a successful solution benefiting all user groups and providing the opportunity for all groups to become empowered toward sustainable use (Attarian, 1991; The National Park Service U.S. Department of the Interior, 2000). Participants discussed the difficulty in becoming a sustainable community, when the desires of the park are not being adequately communicated to the bouldering community. Furthermore, if the park is not educating boulderers, then participants believed the blame for any actions creating degradation should be placed on the NPC and not boulderers. Participants identified a willingness to become more knowledgeable and active in the Niagara Glen community, but felt ignored by the NPC and did not believe that their community was adequately informed and/or represented.

### **Sustainable Use**

It is clear that if boulderers at the Niagara Glen want to have sustained access to bouldering privileges as they are entitled to based on the merit of social sustainability, incorporating the legitimacy of the social and cultural needs while managing environmental

sustainability (Littig & Griebler, 2005) they will need to actively manage their environmental impacts at the Glen. Additionally, as a community, they should critically reflect on their actions while bouldering and interacting with other recreationists. The participant observations, focus group meetings, and data collected by Thompson et al. (2008) identified boulderers as a group that is predominately conscious of their overall impacts while bouldering at the Glen. To reiterate what has been identified elsewhere in this study, the actions of most bouldering participants are that of community members who truly believe they are contributing to environmental sustainability at the Glen. The concern that exists here, however, is that in reality some of the behaviours undertaken by bouldering participants are focusing primarily on the benefits derived from social sustainability, allowing their needs as a group to be fulfilled (through bouldering practices), but are not necessarily promoting protection of the natural environment and affectively managing their ecological footprint at the Glen while pursuing bouldering activities.

Given the recent attention the Glen has received regarding impacts affecting environmental sustainability at this location, it would appear to be disadvantageous for the bouldering community to overestimate their role as environmentalists at the Glen. At times in the study, participants made statements reflecting self-defence and identified their position at the Niagara Glen as informing environmentally sustainable practice. However, participant observations did not always coincide with this belief.

There has been a countless amount of data collected about the potential impacts that bouldering and rock climbing activities have on the natural environment. Impacts creating soil disruption, damage to vegetation, the development of social trails, wildlife disruption, noise, damage to historic and cultural sites, bolting practices and a variety of social and potential economic impacts have been identified by Attarian (1991, 1994, 2003). Additionally, specific environmental concerns related to rock climbing practices affecting land snail communities on rock faces in Ontario, and disruption to cliff face vegetation communities, have been evaluated (Kuntz & Larson 2006; McMillan, et al. 2003). Environmental concerns have also been

specifically identified in conjunction with bouldering activities and include, issues around chalk use, impacts to staging grounds around boulders, the potential impacts created through chipping and gluing handholds on boulders, soil disruption, the frequent use of social trails, bouldering pads and their effect on vegetation around boulders, vegetation on top of boulders, the effects created due to new bouldering development and the impacts to endangered and sensitive fauna and flora through unsustainable bouldering practices (Access Fund 2004, 2006; Love 2008). Specific environmental concerns have been identified in relation to bouldering practices at the Niagara Glen and include damage to the local fauna and flora due to improper crash pad placement, removal of moss and lichen from the tops of boulders, social trail use, micro trash accumulation, and crowding (Ritchie, 2002).

During participant observations, many different behaviours were observed that exhibited both behaviours that reflect negatively on the bouldering community, and behaviours that reflect positively on how participants both interact with the natural environment and the social environment found at the Glen. Some of the environmental concerns identified by Ritchie (2002) and consistent with the literature reviewed in this study were documented as occurring at the Glen through the direct impacts of bouldering participation. Damage to fauna and flora was observed as being created at the Glen as a result of poorly chosen pad placement, topping out boulders, and using social trails. However, what seems most essential to note was that the damage inflicted by boulderers appeared to be created not through malicious means, but rather through lack of understanding and education. What's more, boulderers at the Glen often portray themselves as stewards of the natural environment. This all appeared to be of genuine concern during the focus group interviews, and most of the responses during the focus groups suggest boulderers at the Glen can be a group that is willing to work toward becoming more environmentally sustainable users at the Niagara Glen.

During participant observations, members of the bouldering community were also observed participating in proactive and socially responsible behaviours that appears to be

common among members of this community. Participants were observed discussing access issues among themselves and others, and were also observed passing on information to other users. Additionally, participants were seen cleaning up after others and managing most of their own impacts effectively. Participants seemed to be concerned with becoming more environmentally sustainable users, but it was clear during observations and throughout the focus group meetings, that participants were unsure of how to effectively manage their impacts, and were constantly expressing a want for more guidance, education, and a way to communicate with the whole Glen recreationist community.

Lack of education appeared to be one of the main issues affecting environmental sustainability at the Glen, but also was viewed as the most important solution in changing the behaviours of bouldering participants, and allowing for the sustained continuation of bouldering practices. It was clear that many participants understood environmental sustainability differently in comparison to others and some participants believed their actions while bouldering at the Glen were already contributing to environmental sustainability.

Participants identified the activities leading to degradation at the Niagara Glen resulting from the actions of user groups. Other participants believed that impacts affecting environmental sustainability were apparent in current bouldering practices, but that these issues were mainly the result of uneducated novice bouldering participants. In order for bouldering practices to become environmentally sustainable and promote the continuation of social sustainability, the emphasis appeared to be primarily based on educating newer climbers; however, the data collected through participant observations identified very little division between the actions of veteran participants and those of novice participants. Thus educating all participants appears to be a legitimate solution to some of current practices that lead toward environmental degradation and the decreasing availability of social interaction at the Glen.

The need for guidance and education coming from both park managers and access coalitions, toward more environmentally sustainable bouldering practices does not appear to be

uncommon. Strategies for more environmentally conscious climbing practices leading to socially sustainable participation at other locations appear to utilize education as an important means for passing information along to climbing and bouldering participants. The Southeastern Climbers Coalition (2008) has utilized a '*Crag Education Flyer*' as a means of passing on information to boulderers and non-boulderers alike, while management at Hueco Tanks National Park use a 30 minute education video to inform bouldering participants about sensitive fauna and flora at the park and areas of historical significance (Jackson, 2000; Cavlovic, Berrens, Bohara & Shaw, 2001). Furthermore, participants also identified the educational steps other climbing areas are utilizing in order to inform bouldering participants about potential environmental issues.

Participants identified the use of kiosks and notice boards in other areas, and discussed the commonality of these educational resources. Participants identified their frustration with the NPC for not providing similar signage, as they appeared to believe these resources were valuable in passing on current information and would easily promote minimum impact practices. Participants also identified frustration with the OAC for not providing adequate guidelines that dictate how bouldering should be practiced at the Glen, and believed these resources to be important in sustaining bouldering practices at this location in future.

Whether or not long-term social and environmentally sustainable bouldering practices will take hold at the Niagara Glen is unknown. Access restrictions have been identified by the NPC, as a way to dictate more environmentally sustainable use at the Glen; however, it may be argued that education is a more efficient means of managing the actions of bouldering participants. A combination of both direct and indirect management strategies will likely be used by the NPC consistent with other land management agencies (The National Park Service U.S. Department of the Interior, 2000). Education has been used successfully elsewhere to promote environmentally responsible use and participants appeared to believe that if the Niagara Glen bouldering community as a whole was more educated, their actions at the Glen would become truly more sustainable. If education is passed on to the bouldering community by the NPC and the



OAC, boulderers may gain a clearer understanding of the issues that face the fragile natural environment at the Glen, and this hopefully will in turn change some of the current unsustainable practices. However, what is unknown is whether or not the bouldering community, once educated, will take the appropriate steps to change their behaviours and promote environmental sustainability at the Glen. Equally unknown is whether or not the social world of boulderers, legitimizing their role as sustained recreational users, will be taken into continued consideration by the NPC in future.

### **Recommendations for Further Research**

The findings from this study give rise to other potential research questions that explore the role of place, empowerment, and sustainability in the greater context of bouldering participation at the Niagara Glen. Recommendations include:

1. Replication of this study on a larger scale, evaluating the views of boulderers and rock climbers toward sustainable bouldering practices, community empowerment and a new clean climbing ethic on a national level, to gain a greater understanding of what participants believe truly personifies an ethical and sustainable rock climbing experience.
2. Replication of this study evaluating the perceptions of the NPC and 'Friends of the Glen' community group toward sustainable bouldering practices at the Niagara Glen to gain a better understanding of all Glen stakeholders who affect management decisions.
3. Evaluation of park management practices on environmental sustainability including a more accurate understanding of the recreational carrying capacity of the Niagara Glen to more accurately understand the fragility of fauna and flora, and gain a greater understanding of the impact of outdoor recreation activities on the Niagara Glen environment.

4. Evaluation of standard setting climbing coalitions like the Access Fund and the Southeastern Climbers Coalitions, in order to gain a better understanding of what steps promote an empowered rock climbing community, and what resources are needed to adequately promote clean and sustainable climbing and bouldering practices.
5. Evaluation of current and future trends associated with rock climbing and bouldering practices in order to further understand how to minimize the environmental impacts associated with rock climbing activities including bouldering.

### **My Role: Final Thoughts**

In my first chapter, I discussed under the heading of ‘My Role’ the events that led me to construct the topic for this thesis. This segment of chapter one outlined my initial thoughts and my role in advocating for bouldering practices at the Niagara Glen. I also discussed my belief in the strength of the bouldering community and their ability to come together and promote sustainable bouldering practices as a united and empowered group of recreationists. I discussed my role in defending this group, and my initial belief that we were a targeted group of recreation participants at the Niagara Glen, and that through eliminating our community the NPC was potentially diminishing future advocacy for the Glen. I spoke encouragingly of the potential for unity and allowed this group of bouldering participants to be acknowledged as a community. I believed that the bouldering “community” would (once educated on issues facing the Glen) come to believe that a more critical analysis of their interactions was needed in order to promote social and environmentally sustainable practices, leading to sustainable recreation opportunities for the future. I believed that this shift in thinking would occur for the participants of this study as it did for me, and that they would as a unified group become empowered and seek guidance from the NPC and the OAC in order to become a more informed and sustainable community.

In reality, the experience of exploring the opinions of my peers and observing their actions while bouldering at the Glen identified a group of people that resemble a community, but

are not currently empowered as a community toward taking active steps in creating sustainable bouldering practices at the Glen. I believed it was important for boulderers to identify their perceptions toward environmentally sustainable bouldering at the Glen, but their responses at times seemed disingenuous and identified, in my opinion, a group of individuals that would rather ignore the impact they are inflicting on the environment, than work as a community toward better environmental stewardship. Self-defence and deflecting blame were common themes in the data, and resembled how participants dealt with some of their impacts. Participants would state that they were environmentalists, and that their impact at the Glen was less disruptive than all others combined. These responses were frustrating, as they seemed to show an unwillingness or fear on the part of participants to honestly reflect on their own impacts on the natural world.

While observing bouldering participation at the Glen, I also recognized in some instances behaviours that were not supporting environmental sustainability and the protection of fauna and flora. Boulderers were at times seen in large groups, and were observed leaving sanctioned trails, topping out boulder problems, and not managing micro trash appropriately. These behaviours appeared to not be done callously, but were at times intentional, and in my opinion were not representative of the environmental stewards that many of the participants claimed to be.

Although I speak critically of bouldering participants in some cases, and describe the shortcomings of the community, I do not do so with the intention of blacklisting the community and identifying them as a detriment to the Glen. I believe there are grounds for some of these behaviours and it is easy for me to understand why boulderers feel the need to defend their actions. I also believe that many of the behaviours of bouldering participants are responses to the lack of power, responsibility and education provided to them by the NPC and the Ontario Access Coalition. Management decisions and implications made at the Glen have been constructed by the NPC without weighing the impact that their propositions could have on the bouldering community. Additionally, bouldering participants have been slandered and misrepresented by the NPC, and have been blamed for much of the environmental degradations at the Glen that they are

not responsible for. The impact of the recommendation to ban bouldering at the Glen found in the proposed land management plan, had a further negative affect on how the bouldering community viewed the NPC, and did little to support a socially sustainable Niagara Glen recreationist community.

Consistent with the findings, I believe that in order for bouldering to be both socially and environmentally sustainable at the Niagara Glen, the need exists for a greater and more united Niagara Glen community. I think bouldering has the potential to be very sustainable and the community can continue to learn to work with the NPC to become more conscious of their impacts while at the Glen, but this requires communication and the sharing of responsibility on the part of both the bouldering community and the NPC. Participants acknowledged their willingness to work with the NPC in order to help promote environmental sustainability and this identified on their part, an attitude that speaks optimistically to the future of bouldering at the Glen.

Fortunately for both bouldering participants and the NPC, at the time the data for this study was being analyzed, the OAC was in discussion with the NPC about the future of bouldering at the Glen. The results from these discussions appear hopeful, and it seems as though the future of bouldering at the Glen is relatively secure for the time being. More importantly, the relationship between the OAC representing boulderers and the NPC has become mutually respectful (much more than it used to be), and the OAC is now working with the NPC to evaluate what steps need to be taken in order to sustain bouldering access, while protecting the Glen environment.

Also encouraging are the steps the OAC has taken in the last year to promote community empowerment in Ontario. The OAC has been actively educating climbers and bouldering participants in Ontario through information nights at local climbing gyms, and has developed a set of guidelines for managing bouldering behaviours at the Glen. These guidelines can now be found at climbing gyms across Ontario and are viewable on the OAC website. Additionally,

recent interactions between the NPC, OAC, boulderers and naturalists have been encouraging, with events like the Earth Day walk-around in the spring of 2010 highlighting the cooperation among many different Niagara Glen users. The Earth Day walk-around was representative of newly established cooperation between different users, establishing the common goal of seeing the protection of the natural environment become a centre point for interactions at the Niagara Glen.

Education promoted through this event (and hopefully others like it in future) encourages environmental sustainability and also focuses on sustaining the social importance of recreational use at the Glen. Through discussions and mutual cooperation, this event helped bring groups of people together that may have in the past had preconceived and negative views of each other based on little more than misrepresented ideas. This event allowed these individuals to more accurately discuss their roles at the Glen and create some degree of empathy and understanding for each groups specific interactions and needs at the Glen. It was encouraging to view boulderers and naturalists working together, laughing together and cooperating in an event that primarily focused on evaluating the needs of the natural environment. It was also encouraging to see participants educating each other about sustained recreational practices, while illustrating the importance of sustained environmental protection.

Events like the Earth Day walk-around indicate the potential for a renewed relationship between different user groups at the Glen, and specifically signal what is likely an encouraging future for environmentally conscious bouldering practices. The fact that boulderers are a socially-sustained group of recreation participants is slowly being understood by the NPC, and in the near future cooperation toward a mutually understood set of environmental ethics pertaining to the use of the Niagara Glen may be attained.

Finally, I would like to restate the importance of community empowerment and action in creating and maintaining socially and environmentally sustainable bouldering practices at the Glen. I would also like to acknowledge the contribution action research played in this study in

helping a group to begin to form a more aware, environmentally sustainable and empowered community. Community empowerment strengthened through direct action seems crucial in allowing the bouldering community to make self imposed changes benefiting and perhaps enhancing their relationship with locations like the Niagara Glen. Additionally, feelings of empowerment I think provide ways for the community to honestly and authentically reflect on their actions while bouldering. Community empowerment and action through coalition support has been successful in many different climbing locations and is likely essential to the future of Niagara Glen bouldering. The OAC is beginning to transform into a coalition that will in the future be primarily responsible for continued access to the Glen and other climbing areas in Ontario. It is imperative that they receive the support of the Glen bouldering community, as it is only through community action that a new vision for sustainable bouldering at the Niagara Glen will come to life and remain for generations to come.

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## Appendix A: Focus Group Protocol (Guide)

### **Perceptions of Boulderers Towards Informing Sustainable Bouldering Practices and Community Empowerment, in Order to Inform Future Environmental Policy**

#### Focus Group Script

#### **Welcome and Introductions**

Hello. I would like to welcome and thank you for participating in today's meeting. My name is \_\_\_\_\_ and I am working on a project that looks at the perceptions of boulderers towards informing sustainable practices in the Niagara Glen Nature Reserve. I am also looking at how boulderers, who use the Niagara Glen as a place to recreate, create or enhance an empowered community. Today we are going to reflect on your perspectives related to bouldering in the Niagara Glen, sustainability and community empowerment, in order to better understand the needs and perspectives of the climbing community in southern Ontario.

As many of you know, there have been issues around the activity of bouldering in the Niagara Glen Nature Reserve, and within the last year the Niagara Parks Commission has recommended that bouldering be eliminated in order to protect the sensitive fauna and flora in the Glen. The purpose in conducting this study is to understand what experiences you have had in the Niagara Glen and how those experiences have influenced your perspective of the glen. We are also interested in understanding how being restricted from bouldering in the Glen may effect and change your current perspectives. Also important in this study is understanding your views on sustainable bouldering in the Niagara Glen. Finally this meeting will look at your perspectives of community empowerment. We want to understand whether or not climbers feel a sense of community, and we want to understand what steps can be taken towards creating an empowered and active bouldering community.

I would like to go around the room and ask everyone to introduce yourselves and explain why you are participating in this focus group.

Thank you. During this meeting I would like to encourage all of you to participate. The purpose of this meeting is to first listen to one another, and also we want all of you to express your opinions on each topic discussed. There are no right or wrong answers during this meeting, and we are as interested in negative comments as we are in positive comments, so please be as honest and open as possible. Remember that you are encouraged to share your opinions, but if at anytime you feel uncomfortable and are unwilling to answer a question, then you may pass on the question or leave the meeting. If you willingly contribute to the discussion, then we will assume you have given us your consent to participate.

I will be tape recording this meeting today. We wish to record the meeting in order for us to capture all comments accurately and to be sure we haven't missed anyone's comments. If at anytime there is something that you would like to say with the tape recorder off, please let us know and we can turn it off. Is it all right if we use the tape recorder? Thank you. Please speak up while the tape recorder is playing so that we can ensure you have been heard. Also we ask that only one person speak at a time.

I would also like to ensure you that everything said in the context of this meeting will be kept confidential. Your name will never be associated with the notes and tape recordings transcribed, and the tapes will be destroyed at the conclusion of the study. Any reports published at the end of this study will not use your names in order to conceal your identity. All dates, names and events will be changed in order to maintain confidentiality. Any further questions can be directed to Jeremy Thompson or the Brock University Research Ethics Board.

This meeting will last approximately one hour, depending on the amount of discussion. This covers the information that pertains to this study, are there any questions before we begin?

### **Questions**

1. First, we would like to know how you first came to climb at the Niagara Glen.

#### *Follow Up Probes*

Did someone introduce you to it? Who?

How did you hear about the Niagara Glen?

Was it a well-known bouldering destination when you first visited the site?

2. I would like you to close your eyes for a moment and when I say the words Niagara Glen, what pops into your head first?

*Follow Up Probes*

Do you think of a particular area?

Do you think of people?

Do you think of a specific boulder problem?

Why?

3. What do you think about the recent discussions about access restrictions and closures to bouldering at the Niagara Glen?

*Follow-up probes*

How does this make you feel?

How would you react if they banned bouldering at the Niagara Glen?

What have you done to be involved with maintaining access at the Niagara Glen?

3. When I say the words “sustainable bouldering”, what is the first thing that pops into your head?

*Follow Up Probes*

Is bouldering sustainable?

What can be done to make bouldering sustainable?

What is unsustainable about the practice of bouldering?

4. On a scale of 1-10, 1 *being absence of community*, 10 *being strong community* I want you to rate how well you think the bouldering community comes together to support maintaining access at the Niagara Glen?

*Follow Up Probes*

What supports community in your opinion?

What deters from community in your opinion?

5. How would you describe the culture of the Niagara Glen bouldering community?

*Follow Up Probes*

Do you think the Niagara Glen bouldering community is strong? If so, why? If not, why not?

6. When I say the word “community empowerment” what is the first thought that comes to mind about the bouldering community at the Niagara Glen?

*Follow Up Probes*

How do you think community is formed and maintained?

What is your vision for the Niagara Glen bouldering community in the future?

7. Do you have any suggestions on how the Niagara Glen bouldering community can become a better steward of the natural environment?

## **Wrap Up and Discussion**

This concludes the formal questions for this discussion, is there anything that you think that I should have asked but didn't? What else would you like to add to the discussion that may not have been discussed today?

## **Closing**

I would like to thank everyone for coming in and taking the time to share your thoughts and opinions. The information you have given us today will be very valuable in understanding the thoughts and opinions of boulderers who use the Niagara Glen as a place to recreate. We will be compiling all of your thoughts and comments and will be using this information in the near future to discuss perceptions of bouldering, sustainable bouldering and community empowerment. Thank you again for your time.



## Appendix B: Letter of Invitation

[TO BE PRINTED ON BROCK LETTERHEAD]

**Title of Study:** A Case Study of Climbers Perceptions Toward Sustainable Bouldering Practices in the Niagara Glen Nature Reserve.

**Principle Investigator:** Jeremy Thompson, Graduate Student, Department of Recreation and Leisure Studies, Brock University.

**Faculty Supervisor:** Dr. Garrett Hutson, Assistant Professor, Department of Recreation and Leisure Studies, Brock University.

I, Jeremy Thompson, Graduate Student from the Department of Recreation and Leisure, Brock University, invite you to participate in a research project entitled, A Case Study of Climbers Perceptions Towards Sustainable Bouldering Practices in the Niagara Glen Nature Reserve.

The purpose of this study is to identify the perceptions of boulderers toward sustainable participation in the Niagara Glen, in order to help inform future environmental policies and create a unified vision for future bouldering practices in the Niagara Glen.

The expected duration of participation is a one hour focus group, occurring in the summer of 2009. The focus group will take place at Climbers Rock, Climbing Gym 5155 Harvester Road, Burlington Ontario.

This research will benefit the community of climbers in Southern Ontario, as the purpose of the study is to promote a shared community vision for future bouldering practices in the Niagara Glen, and promote sustainable practices as identified by members of the community. This research will be important in providing a venue for discussion on the issues facing access in the Niagara Glen, and providing a way for members of the bouldering community to investigate solutions for better bouldering practices.

If you have any questions regarding your rights as a research participant, please contact the Brock University Research Ethics Officers (905 688-5550, ext 3035, [reb@brocku.ca](mailto:reb@brocku.ca))

If you have any questions you may contact me,

Thank you,

**[Insert Signature of Principle Investigator]**

Jeremy Thompson  
Graduate Student  
(905 524-1018)  
[jt04yv@brocku.ca](mailto:jt04yv@brocku.ca)

Dr. Garrett Hutson  
Assistant Professor  
(905) 688-5550 Ext. 4784  
[ghutson@brocku.ca](mailto:ghutson@brocku.ca)

This study has been reviewed and received ethics clearance through Brock University Research Ethics Board (08-347)

## Appendix C: Consent Form

Date:

Project Title: A Case Study of Climbers Perceptions Toward Sustainable Bouldering Practices in the Niagara Glen Nature Reserve.

Principal Investigator: Jeremy Thompson, Graduate Student, Department of Recreation and Leisure Studies  
Brock University  
(905) 524-1018  
[jt04yv@brocku.ca](mailto:jt04yv@brocku.ca)

Faculty Supervisor: Dr. Garrett Hutson, Assistant Professor.  
Department of Recreation and Leisure Studies  
Brock University  
(905) 688-5550 Ext. 4784  
[ghutson@brocku.ca](mailto:ghutson@brocku.ca)

### **INVITATION**

You are invited to participate in a study that involves research. The purpose of this study is to identify the perceptions of boulderers toward sustainable participation in the Niagara Glen, in order to help inform future environmental policies and create a unified vision for future bouldering practices in the Niagara Glen

### **WHAT'S INVOLVED**

As a participant, you will be asked to participate in a focus group interview session, where you will participate in discussion based around the theme of perceptions of boulderers toward sustainable participation in the Niagara Glen. The focus group interview will begin with an introduction, followed by 7 questions and a wrap-up discussion period. Participation will take approximately one hour of your time.

### **POTENTIAL BENEFITS AND RISKS**

Possible benefits of participation may include a better understanding of person place relationships with the Niagara Glen and increased advocacy for protecting Niagara Glen access. There also may be risks associated with participation that could include as a result of negative outcomes in climber behaviours further restrictions to bouldering practices in the Niagara Glen.

### **CONFIDENTIALITY**

All information you provide for the purpose of this study will be considered confidential and will be grouped with responses from other participants. We ask you to please respect your fellow participants by keeping all information that identifies or could potentially identify a participant and/or his/her comments confidential.

Data collected during this study will be stored in a locked filing cabinet in the home of Jeremy Thompson. Data will be kept for one year after which time data from the study will be disposed of by way of shredding. Access to this data will be restricted to Jeremy Thompson and Dr Garrett Hutson.

### **VOLUNTARY PARTICIPATION**

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time and may do so without any penalty or loss of benefits to which you are entitled.

### **PUBLICATION OF RESULTS**

Results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available from Jeremy Thompson via e-mail at [jt04yv@brocku.ca](mailto:jt04yv@brocku.ca)

**CONTACT INFORMATION AND ETHICS CLEARANCE**

If you have any questions about this study or require further information, please contact the Principal Investigator or the Faculty Supervisor (where applicable) using the contact information provided above. This study has been reviewed and received ethics clearance through the Research Ethics Board at Brock University (08-347). If you have any comments or concerns about your rights as a research participant, please contact the Research Ethics Office at (905) 688-5550 Ext. 3035, reb@brocku.ca.

Thank you for your assistance in this project. Please keep a copy of this form for your records.

**CONSENT FORM**

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive any additional details I wanted about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent at any time.

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## Appendix D: Observation Template

## Niagara Glen Bouldering Observation

Brief description of \_\_\_\_\_ *Fill in Information:* \_\_\_\_\_ Male  
 Date \_\_\_\_/\_\_\_\_/\_\_\_\_  
 observed activity : \_\_\_\_\_  
 Female \_\_\_\_\_ Mo. Day Yr. \_\_\_\_\_  
 Location in Glen \_\_\_\_\_ Observer \_\_\_\_\_

1. As participants practice bouldering activities observe for the following activities and mark the corresponding box with either a check mark or an X if an activity is not applicable fill in the box with N/A.
2. Any other specific notes related to themes can be made in corresponding box; general notes can be made in the space provided at the bottom.

Tops out Boulder Problem with Excessive Vegetation.	Leaves the sanctioned trail to climb on boulders.	Cleans up micro trash (tape, chalk etc.)	Picks up litter left by other user groups
Removes vegetation on or around boulder/excessive cleaning of boulder or staging ground.	Makes campfires	Uses excessive amounts of chalk/does not clean chalk or tick marks from handholds once climbing is finished.	Travels in a large group 3 and up.
Travels in a small group 2-3 individuals.	Interacts appropriately with other user groups	Disposes of personal waste appropriately.	Educates others on appropriate practice while in the Glen.
Respects wildlife and vegetation	Is appropriately prepared and appears to plan ahead before visiting the Glen (has available methods to carry out trash/clean boulders after use).	Manages personal safety and the safety of climbing partners in an appropriate manner (uses crashpads, has a first aid kit available, spotting etc.)	Places crashpads on durable surfaces taking care to avoid foliage on staging ground.